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**ANALYSIS OF VECTOR WIND CHANGE WITH RESPECT TO TIME
FOR CAPE KENNEDY, FLORIDA**

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16. ABSTRACT <p>Wind vector change with respect to time at Cape Kennedy, Florida, is examined according to the theory of multivariate normality. The joint distribution of the four variables represented by the components of the wind vector at an initial time and after a specified elapsed time is hypothesized to be quadrivariate normal; the fourteen statistics of this distribution, calculated from 15 years of twice-daily rawinsonde data are presented by monthly reference periods for each month from 0 to 27 km. The hypotheses that the wind component change with respect to time is univariate normal, that the joint distribution of wind component changes is bivariate normal, and that the modulus of vector wind change is Rayleigh are tested by comparison with observed distributions. Statistics of the conditional bivariate normal distributions of vector wind at a future time given the vector wind at an initial time are derived.</p> <p>Wind changes over time periods from 1 to 5 hours, calculated from Jimsphere data, are presented. Extension of the theoretical prediction (based on rawinsonde data) of wind component change standard deviation to time periods of 1 to 5 hours falls (with a few exceptions) within the 95 percentile confidence band of the population estimate obtained from the Jimsphere sample data.</p> <p>The joint distributions of wind change components, conditional wind components, and 1 km vector wind shear change components are illustrated by probability ellipses at the 95 percentile level.</p>			
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FOREWORD

This report describes an investigation performed under Contract NAS8-32226 to the National Aeronautics and Space Administration, George C. Marshall Space Flight Center (NASA/MSFC). Mr. Orvel E. Smith of MSFC Atmospheric Sciences Division, Space Sciences Laboratory, was the NASA Contracting Officer's Representative (COR). The author wishes to express his appreciation to Mr. Smith for the technical discussions and guidance during this effort. The achievements of this investigation could not have been possible without the analytical tools that have been developed in past investigations by the Space Sciences Laboratory.

The author wishes to acknowledge the contributions to this effort by other SAI personnel; Messrs. Willie Robinson and William Adcock* were responsible for the computer programming efforts utilizing the UNIVAC 1103 computer and Mr. John Hickey prepared the programs for the Space Sciences Laboratory Hewlett Packard 21 MX computer.

*Not presently affiliated with SAI.

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I. INTRODUCTION

It is anticipated that launches associated with the Orbital Flight Test (OFT) missions of the Space Shuttle will be conducted under wind profile conditions that are less severe than the design criteria wind profile. This will require the establishment of techniques to minimize the probability of exceeding design maximum wind loading during ascent. Reduction of wind loading can be achieved by wind biasing the ascent trajectory. Ideally, the maximum reduction of wind loading would be achieved if the wind profile "seen" by the ascending vehicle is known prior to launch. This ideal can only be approximated in view of the temporal variability of the atmosphere, limitations in available measurement techniques and the time lag associated with implementing changes in the ascent vehicle wind bias program. However, acceptable wind loading can be achieved over most anticipated winds aloft conditions by designing a pre-launch wind monitoring plan which provides an estimate of in-flight winds within specified error bounds. The establishment of the wind monitoring plan will be based, in part, on knowledge of the statistics of wind change with respect to time.

This study of wind change over Cape Kennedy, Florida, is based on a large sample of winds aloft data (14,610 Rawinsonde profiles) obtained during a fifteen year period. Wind change is expressed in terms of component change, unconditional and conditional joint distribution of component changes, modulus of vector change and the joint distribution of wind shear component change.

This report consists of a brief discussion of technical background (Section II), an analysis of wind change statistics (Section III), a discussion of conclusions and recommendations (Section IV), and listings of the calculated monthly statistics of wind change with respect to time at 1 km altitude increments from 0 to 27 km (Appendix).

11. TECHNICAL BACKGROUND

A. DATA

Wind change statistics for periods from 12 to 72 hours are calculated from the serially complete (0-27 km) Rawinsonde data at 1 km altitude intervals obtained twice daily during the period 1956-70 at Cape Kennedy, Florida. The Rawinsonde data obtained four times daily during the period 1962-66 are used to verify extension (to time intervals of six hours) of theoretical distributions based on the twice daily 1956-70 data. Sequential Jimsphere wind profile data are used for analysis of wind changes for periods less than six hours.

B. COORDINATE SYSTEM

The basic winds aloft data are recorded in terms of wind direction, θ and magnitude, W . The wind vector is expressed in the standard meteorological coordinate system in which the direction from which the wind is blowing is measured in degrees clockwise from true north. The zonal component, u , of the wind vector is positive for a west (west to east) wind ($\theta=270^\circ$) and negative for an east (east to west) wind ($\theta=90^\circ$). The meridional component, v , is positive for a south (south to north) wind ($\theta=180^\circ$) and negative for a north (north to south) wind ($\theta=0^\circ$). u and v are obtained from θ and W according to

$$u = -W \sin \theta, \quad 0 \leq \theta \leq 360^\circ \quad (1)$$

$$v = -W \cos \theta, \quad (2)$$

The relation between θ defined above and the angle defined in the standard mathematical polar form is:

$$\theta = 270 - \theta_{\text{Math}} \quad (3)$$

C. DEFINITIONS

For brevity, whenever feasible, the term temporal variability is used instead of "change with respect

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to time". The subscript 0 is used to denote the initial value of a variable and the subscript 1 denotes the variable after an elapsed time, Δt . Thus:

$$\Delta u = u_1 - u_0 \quad (4)$$

$$\Delta v = v_1 - v_0 \quad (5)$$

Where, Δu and Δv are the components of the wind change for a specified Δt . The modulus, R , of the wind change with respect to time is given by:

$$R = \sqrt{(\Delta u)^2 + (\Delta v)^2} \quad (6)$$

The term wind shear is used exclusively in this report to describe the change of vector wind with respect to a specified vertical distance below a specified altitude. The modulus, W_s , of the vector wind shear is

$$R = \sqrt{(u')^2 + (v')^2} \quad (7)$$

Where, u' is the zonal wind shear and v' is the meridional wind shear. It is conventional in discussions of wind shear calculations to use the term vector wind shear to represent the modulus of vector wind shear.

Zonal and meridional wind shear change with respect to time are denoted as follows:

$$\Delta u' = u'_1 - u'_0 \quad (8)$$

$$\Delta v' = v'_1 - v'_0 \quad (9)$$

The modulus of vector wind shear change with respect to time is

$$R = \sqrt{(\Delta u')^2 + (\Delta v')^2} \quad (10)$$

The means are denoted by an overbar, the standard deviations and the correlation coefficients are denoted by σ_x and $R(X,Y)$, respectively, with X and Y replaced with the notation appropriate to the variable of interest.

D. STATISTICS

The wind vector measurements at an initial time and after an elapsed time are treated in this investigation as a sample from a quadrivariate normal distribution defined by the fourteen statistics listed below:

MEANS

$$\bar{u}_0, \bar{v}_0, \bar{u}_1, \bar{v}_1$$

STANDARD DEVIATIONS

$$\sigma_{u_0}, \sigma_{v_0}, \sigma_{u_1}, \sigma_{v_1}$$

CORRELATION COEFFICIENTS

$$R(u_0, v_0), R(u_0, u_1)$$

$$R(v_0, v_1), R(u_1, v_1)$$

$$R(u_1, v_0), R(v_1, u_0)$$

The fourteen statistics of the quadrivariate normal distribution of vector wind difference with respect to time consist of the five bivariate normal statistics of vector wind at an initial time (\bar{u}_0 , \bar{v}_0 , σ_{u_0} , σ_{v_0} and $R(u_0, v_0)$) and the nine statistics involving component differences which can be calculated from the quadrivariate statistics listed above according to the following equations:

MEANS

$$\Delta u = \bar{u}_1 - \bar{u}_0 = \bar{u}_1 - \bar{u}_0 \quad (11)$$

$$\Delta v = \bar{v}_1 - \bar{v}_0 = \bar{v}_1 - \bar{v}_0 \quad (12)$$

STANDARD DEVIATIONS

$$\sigma_{\Delta u} = \sqrt{\sigma_{u_1}^2 + \sigma_{u_0}^2 - 2\sigma_{u_1}\sigma_{u_0}R(u_1, u_0)} \quad (13)$$

$$\sigma_{\Delta v} = \sqrt{\sigma_{v_1}^2 + \sigma_{v_0}^2 - 2\sigma_{v_1}\sigma_{v_0}R(v_1, v_0)} \quad (14)$$

Where $R(x, y)$ is the correlation coefficient of variables x and y .

CORRELATION COEFFICIENTS

$$R(u_0, \Delta u) = \frac{\sigma_{u_1} R(u_0, u_1) - \sigma_{u_0}}{\sigma_{\Delta u}} \quad (15)$$

Where

$\sigma_{\Delta u}$ is obtained from Equation 13.

$$R(v_0, \Delta v) = \frac{\sigma_{v_1} R(v_0, v_1) - \sigma_{v_0}}{\sigma_{\Delta v}} \quad (16)$$

Where $\sigma_{\Delta v}$ is obtained from Equation 14

$$R(\Delta u, v_0) = \frac{\sigma_{u_1} R(v_0, u_1) - \sigma_{u_0} R(u_0, v_0)}{\sigma_{\Delta u}} \quad (17)$$

$$R(\Delta v, u_0) = \frac{\sigma_{v_1} R(u_0, v_1) - \sigma_{v_0} R(u_0, v_0)}{\sigma_{\Delta v}} \quad (18)$$

$$R(\Delta u, \Delta v) = \frac{[\sigma_{u_1} \sigma_{v_1} R(u_1, v_1) - \sigma_{u_1} \sigma_{v_0} R(u_1, v_0) + \sigma_{u_0} \sigma_{v_1} R(u_0, v_1) + \sigma_{u_0} \sigma_{v_0} R(u_0, v_0)]}{\sigma_{\Delta u} \sigma_{\Delta v}} \quad (19)$$

III. ANALYSIS

A. INTRODUCTION

The statistics presented in the appendix of this report can be useful in the establishment of a basis for certain aspects of Space Shuttle Launch planning. A pre-launch wind monitoring program may be required to provide data for assessment or modification of the Space Shuttle wind bias program. The development and utilization of the wind monitoring program will require knowledge of the magnitude of vector wind change with respect to time. The analysis presented in this section establishes a theoretical basis for estimation of wind change. This is accomplished by comparison of theoretical probability distributions, which contain wind change sample statistics as parameters (from the appendix of this report), to observed probability distributions of wind change. Wind change with respect to time is analyzed herein in terms of wind component change, unconditional and conditional joint distribution of wind component change, modulus of vector wind change, and the joint distribution of wind shear component change.

B. WIND COMPONENT CHANGE WITH RESPECT TO TIME

The theoretical probability distribution of wind component change with respect to time is univariate normal with zero mean and standard deviation given by Equations 13 and 14; the assumption of zero means of component differences is verified by the sample statistics given in the appendix. The theoretical normal distribution of component differences can be derived by using either the standard deviations of component differences given in the appendix or an estimate which can be obtained from the standard deviation of the components if it is assumed that:

$$\sigma_{u_0} = \sigma_{u_1} = \sigma_u$$

$$\sigma_{v_0} = \sigma_{v_1} = \sigma_v$$

Equations 13 and 14 reduce to

$$\sigma_{\Delta u} = \sqrt{2} \sigma_u \sqrt{1 - R(u_1, u_0)} \quad (20)$$

$$\sigma_{\Delta v} = \sqrt{2} \sigma_v \sqrt{1 - R(v_1, v_0)} \quad (21)$$

The wind component autocorrelation functions, $R(u_1, u_0)$ and $R(v_1, v_0)$ can be represented by a negative exponential function of time increment, τ , i.e.,

$$R(u_1, u_0) = \text{EXP}(-b\tau) \quad (22)$$

$$R(v_1, v_0) = \text{EXP}(-c\tau) \quad (23)$$

where b and c are computed according to

$$b = - \frac{\sum_i \tau_i \ln R_i(u_1, u_0)}{\sum_i \tau_i^2}$$

$$c = - \frac{\sum_i \tau_i \ln R_i(v_1, v_0)}{\sum_i \tau_i^2}$$

Examples of the decay of the autocorrelation function at 12 km during January, April and July at Cape Kennedy are illustrated in Figure 1; the lines in the figure represent the decay rate predicted by Equations 22 and 23.

Substitution of Equations 22 and 23 into 20 and 21, respectively, yields a simple expression for $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ in terms of σ_u and σ_v , respectively.

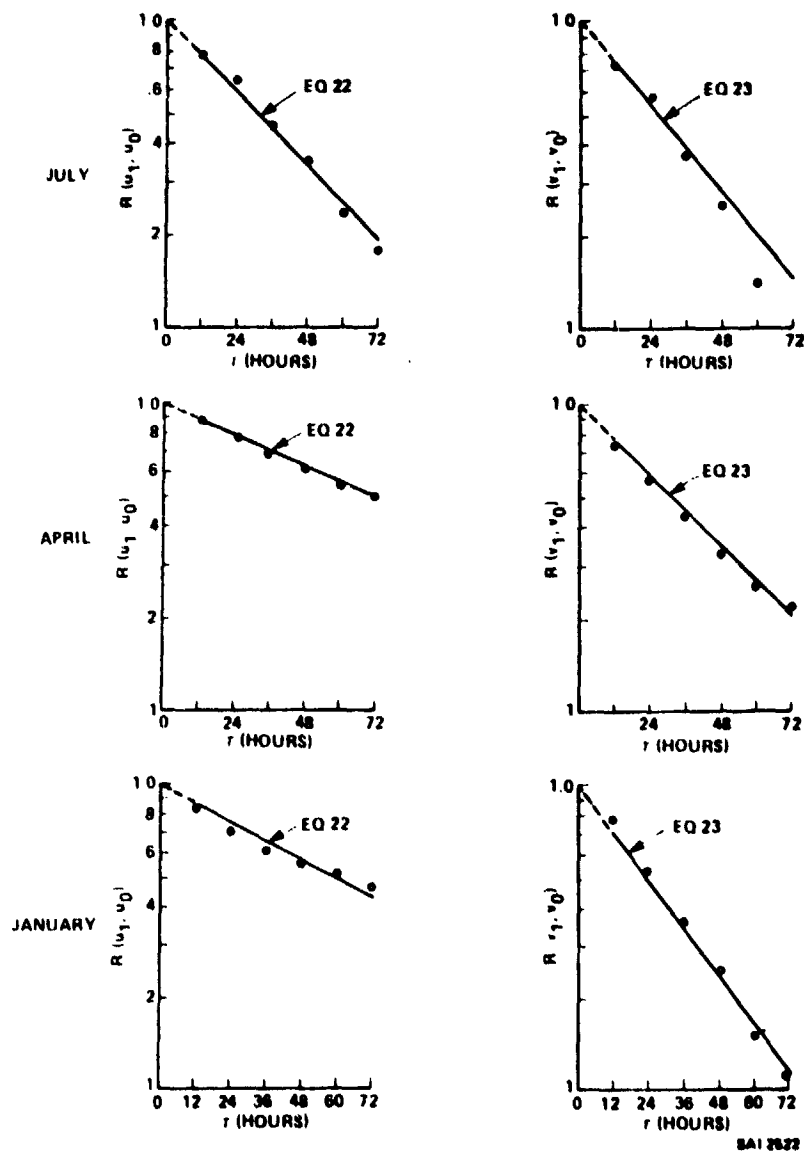


Figure 1. Zonal and Meridional Wind Component Auto-correlation at 12 km at Cape Kennedy, Florida (1956-60)

$$\sigma_{\Delta u} = \sqrt{2} \sigma_u \sqrt{1 - \text{EXP}(-b\tau)} \quad (24)$$

$$\sigma_{\Delta v} = \sqrt{2} \sigma_v \sqrt{1 - \text{EXP}(-c\tau)} \quad (25)$$

Equations 24 and 25 indicate that $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ are asymptotic to $\sqrt{2} \sigma_u$ and $\sqrt{2} \sigma_v$ for large values of τ . Therefore, estimates of the extreme value of $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ are obtained by setting τ equal to ∞ in equations 24 and 25.

The calculated values of b and c for KSC during January, April and July are plotted in Figures 2 through 4. The calculated and observed values of $\sigma_{\Delta u}(\tau)$ and $\sigma_{\Delta v}(\tau)$ at 1, 6, 12, 18 and 24 km during January, April and July are listed in Tables 1 through 3. The estimated extreme values of $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$, ($\sqrt{2} \sigma_u$ and $\sqrt{2} \sigma_v$, respectively), are listed at the bottom of each column of calculated values. The comparisons in Tables 1 through 3 indicate that $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ can be accurately estimated by application of Equations 24 and 25, respectively. General application of this estimation technique at other locations utilizing published statistics of wind component standard deviations (as in [4] for example) would require a more adequate knowledge of the form of the autocorrelation function than is presently available.

The theoretical distribution of wind component differences has been derived from sample estimates of $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ and $\bar{\Delta u}$ and $\bar{\Delta v}$ (given in the appendix) for the intervals of 12, 24, 36 and 48 hours during January, April and July at 12 km over Cape Kennedy; the theoretical normal distributions are plotted as straight lines in Figures 5 through 10; the plotted symbols represent the observed distributions of Δu and Δv . It is indicated that the observed distribution of component changes is either accurately or conservatively represented by the theoretical normal distribution for probabilities from .023 to .977.

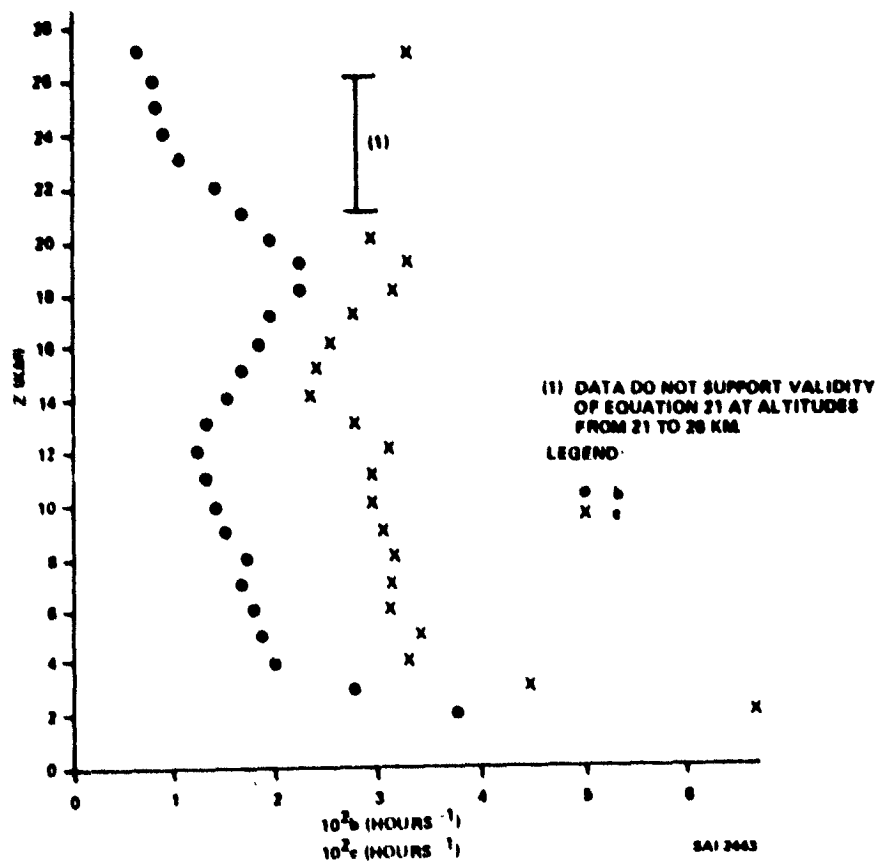


Figure 2. Constants b and c of Equations 24 and 25 for Cape Kennedy during January (1956-70)

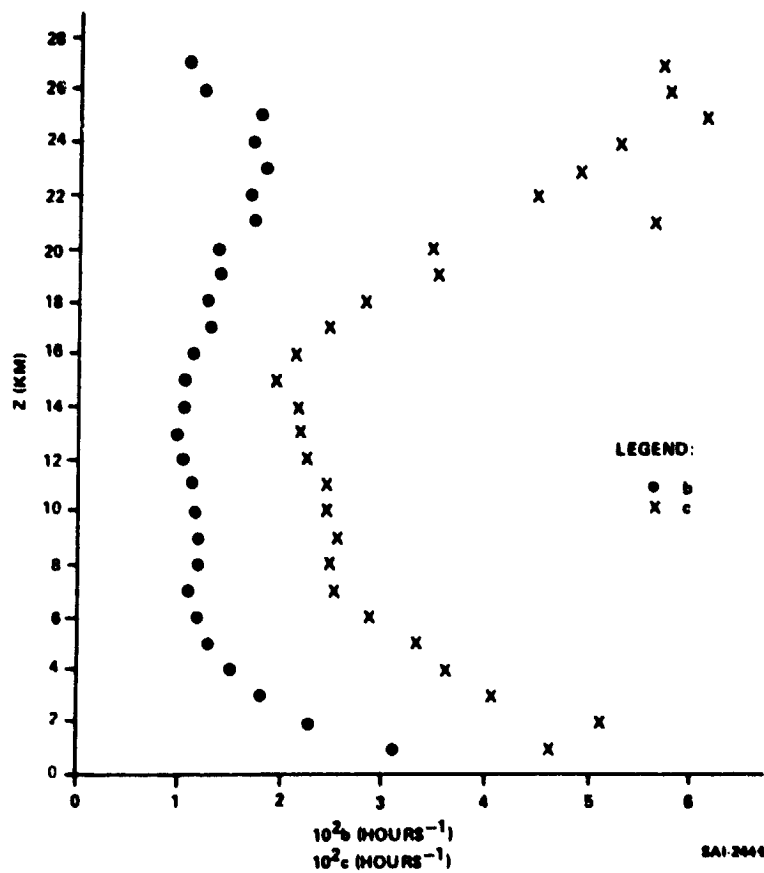


Figure 3. Constants b and c of Equations 24 and 25 for Cape Kennedy during April

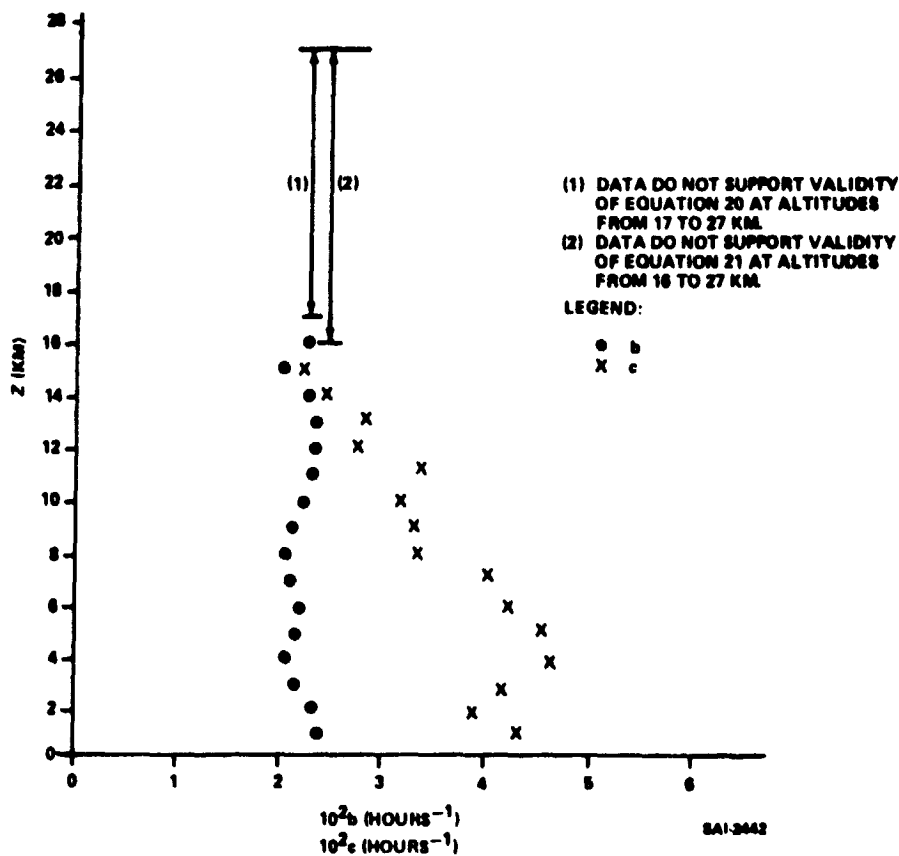


Figure 4. Constants b and c of Equations 24 and 25 for Cape Kennedy during July (1956-70)

Table 1. Calculated [Eqs. 24, 25] and Observed $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ during January at Cape Kennedy at 1, 6, 12, 18 and 24 KM

	τ (Hours)	$\sigma_{\Delta u}$		$\sigma_{\Delta v}$	
		Calc.	Obs.	Calc.	Obs.
24 KM	12	4.09	5.63		4.07
	24	5.63	6.36		4.09
	36	6.72	7.08		4.69
	48	7.58	7.56	*	4.67
	60	8.27	8.14		5.06
	72	8.85	8.51		4.99
	∞	12.91	-		
18 KM	12	5.31	6.60	4.59	4.44
	24	7.06	7.36	5.96	5.40
	36	8.15	8.35	6.75	6.29
	48	8.90	8.94	7.24	6.94
	60	9.43	9.49	7.56	7.49
	72	9.82	9.78	7.78	7.75
	∞	11.02	-	8.23	-
12 KM	12	7.69	8.70	11.48	9.94
	24	10.51	11.62	14.93	14.20
	36	12.45	13.34	16.92	16.54
	48	13.92	14.47	18.17	17.86
	60	15.08	15.18	18.98	18.88
	72	16.02	15.87	19.53	19.36
	∞	21.17	-	20.70	-
6 KM	12	6.05	6.58	7.53	7.73
	24	8.13	8.45	9.79	10.29
	36	9.49	9.90	11.09	11.48
	48	10.47	10.80	11.90	12.18
	60	11.19	11.22	12.44	12.27
	72	11.75	11.76	12.79	12.32
	∞	13.86	-	13.55	-
1 KM	12	6.92	5.64	7.70	5.82
	24	8.52	8.04	8.63	7.73
	36	9.23	9.31	8.85	8.86
	48	9.58	9.70	8.90	9.23
	60	9.75	9.70	8.92	9.10
	72	9.84	9.62	8.92	8.87
	∞	9.93	-	8.92	-

*Validity of Eq. 25 not supported by the data at 24 KM

Table 2. Calculated [Eqs. 24, 25] and Observed
 ^{210}Au and ^{210}Au During April at Cape Kennedy
 at 1, 6, 12, 18 and 24 KM

	t (Hours)	^{210}Au		^{210}Au	
		Calc.	Obs.	Calc.	Obs.
24 KM	12	3.14	4.06	2.86	3.42
	24	4.24	4.41	3.55	3.36
	36	4.97	4.94	3.86	3.90
	48	5.49	5.23	4.02	3.93
	60	5.89	5.81	4.11	4.16
	72	6.19	6.11	4.15	4.24
	∞	7.45	-	4.20	-
18 KM	12	4.08	5.35	3.93	4.00
	24	5.57	6.27	5.15	5.01
	36	6.60	6.91	5.87	5.81
	48	7.37	7.46	6.34	6.34
	60	7.98	7.80	6.65	6.62
	72	8.47	7.89	6.87	6.78
	∞	11.10	-	7.40	-
12 KM	12	8.25	8.31	9.51	9.81
	24	11.33	11.29	12.65	12.88
	36	13.18	13.55	14.60	14.82
	48	15.14	15.04	15.94	16.05
	60	16.47	16.27	16.90	16.87
	72	17.57	17.10	17.59	17.34
	∞	21.52	-	19.71	-
6 KM	12	5.38	5.78	5.53	5.69
	24	7.35	7.71	7.24	7.27
	36	8.72	9.02	8.24	8.57
	48	9.76	9.70	8.89	9.18
	60	10.58	10.45	9.32	9.38
	72	11.25	10.93	9.61	9.33
	∞	15.03	-	10.31	-
1 KM	12	5.16	4.99	4.84	4.69
	24	6.71	6.83	6.08	6.08
	36	7.60	8.07	6.69	7.15
	48	8.16	8.34	7.02	7.45
	60	8.52	8.40	7.20	7.50
	72	8.76	8.27	7.30	7.48
	∞	9.28	-	7.44	-

Table 3. Calculated [Eqs. 24, 25] and Observed $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ during July at Cape Kennedy at 1, 6, 12, 18 and 24 KM

	τ (Hours)	$\sigma_{\Delta u}$		$\sigma_{\Delta v}$	
		Calc.	Obs.	Calc.	Obs.
24 KM	12		4.06		4.11
	24		3.91		3.59
	36		4.18		4.13
	48	*	4.13	*	3.57
	60		4.53		4.15
	72		4.36		3.75
	∞		-		-
18 KM	12		3.17		3.84
	24		2.99		3.14
	36		3.50		3.95
	48	*	3.66	*	3.63
	60		3.78		4.03
	72		3.88		3.79
	∞		-		-
12 KM	12	6.76	6.46	5.54	5.49
	24	8.97	8.23	7.27	6.90
	36	10.34	10.17	8.29	8.27
	48	11.26	11.08	8.96	8.97
	60	11.92	11.98	9.42	9.61
	72	12.39	12.29	9.73	9.85
	∞	13.77	-	10.51	-
6 KM	12	3.33	3.45	3.68	3.66
	24	4.43	4.21	4.66	4.12
	36	5.13	5.12	5.16	4.94
	48	5.60	5.54	5.45	5.30
	60	5.94	5.95	5.61	5.59
	72	6.19	6.19	5.71	5.69
	∞	6.97	-	5.85	-
1 KM	12	3.09	2.95	2.95	3.06
	24	4.09	3.46	3.74	3.37
	36	4.71	4.45	4.14	4.06
	48	5.12	4.95	4.36	4.26
	60	5.42	5.51	4.49	4.51
	72	5.62	5.74	4.57	4.49
	∞	6.22	-	4.68	-

*Validity of Eqs. 24 and 25 not supported by the data at 18 and 24 KM

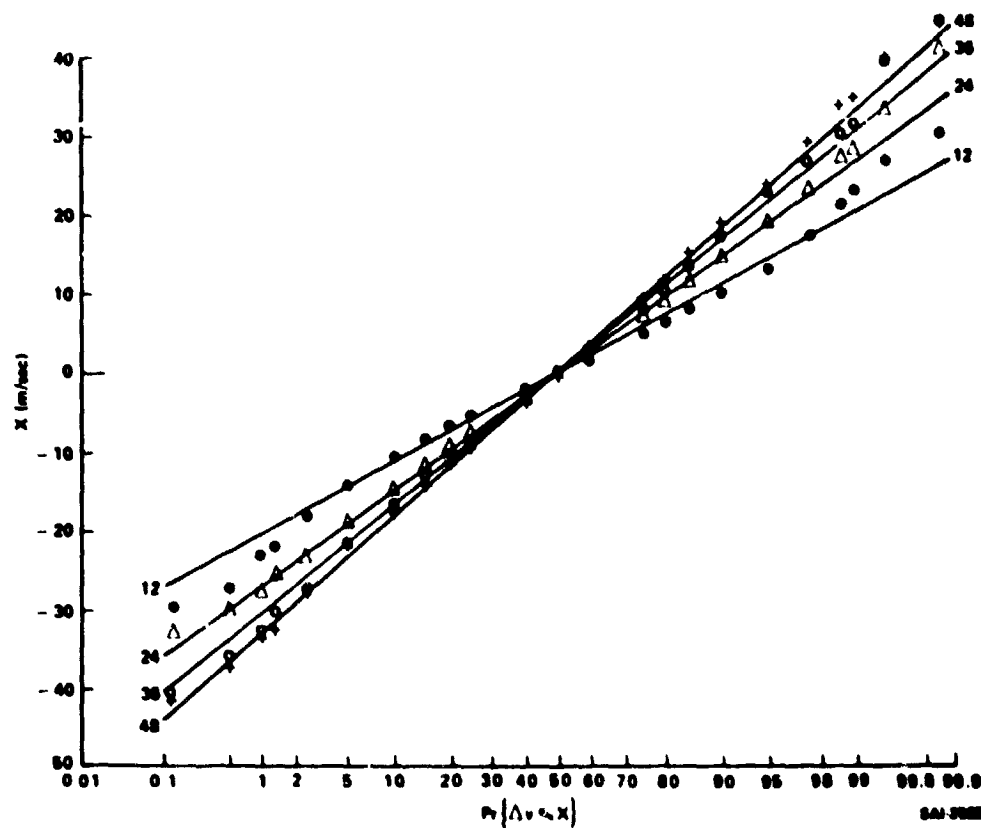


Figure 5. Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of zonal wind component change, Δu , with respect to time increment, τ , during January at 12 km at Cape Kennedy (1956-70)

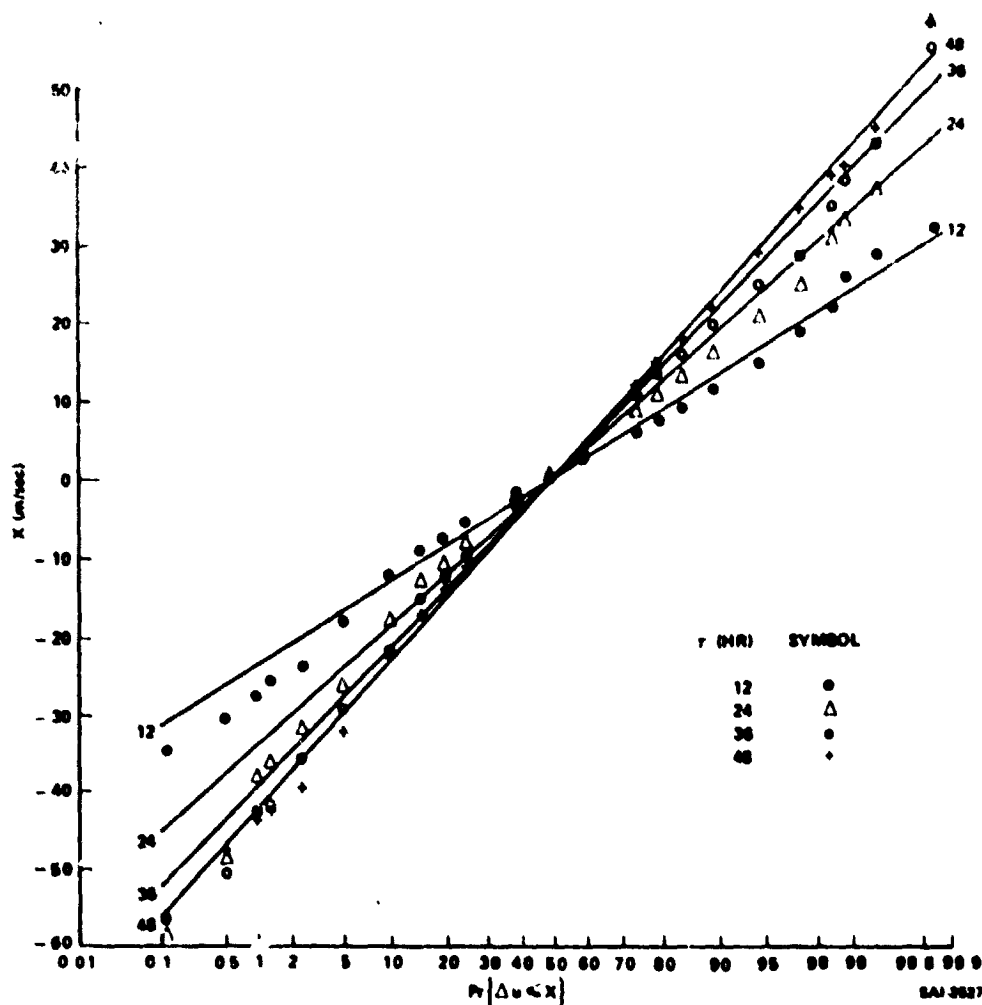


Figure 6. Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of meridional wind component change, Δv , with respect to time increment, τ , during January at 12 km at Cape Kennedy (1956-70)

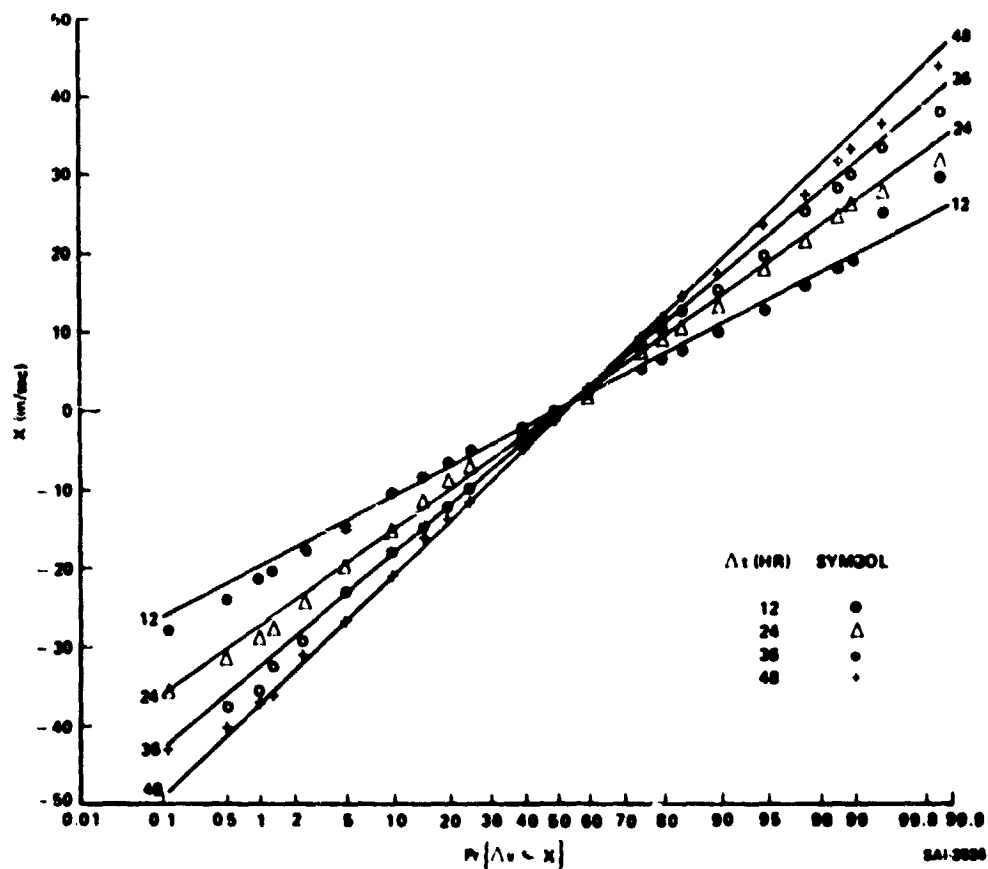


Figure 7. Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of zonal wind component changes, Δu , with respect to time increment, Δt , during April at 12 km at Cape Kennedy (1956-70)

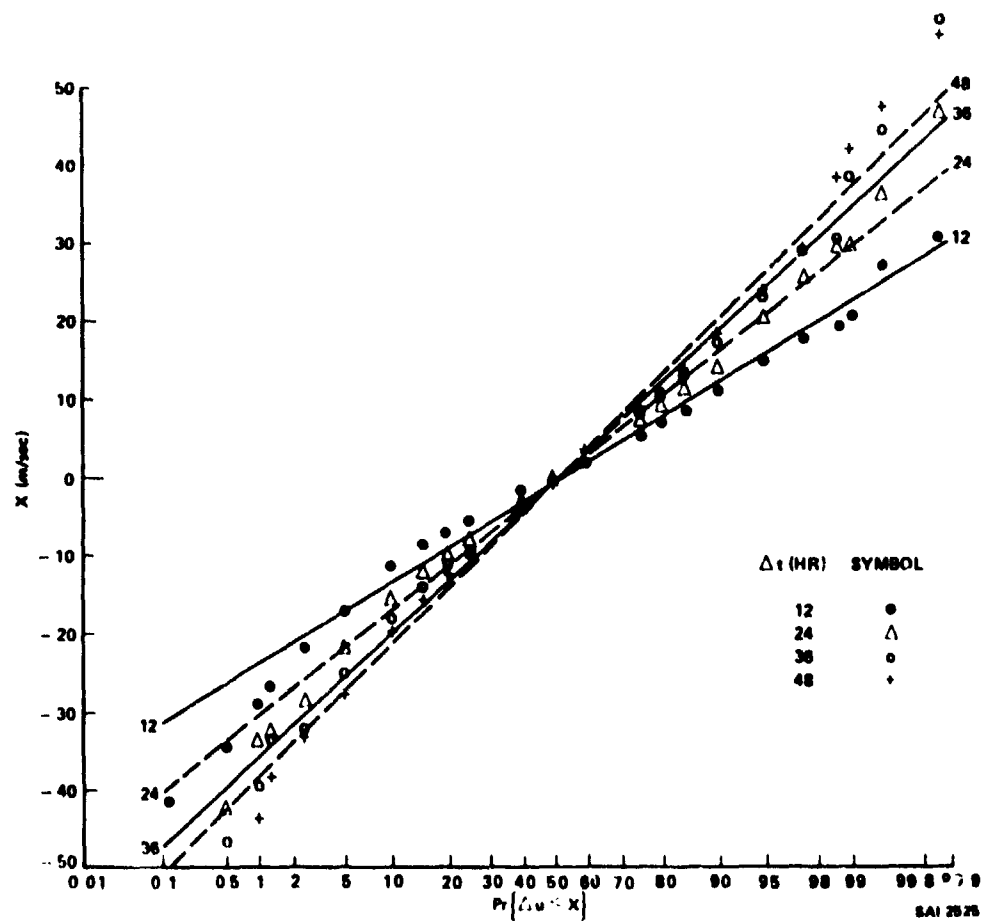


Figure 8. Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of meridional wind component change, Δv , with respect to time increment, t , during April at 12 km at Cape Kennedy (1956-70)

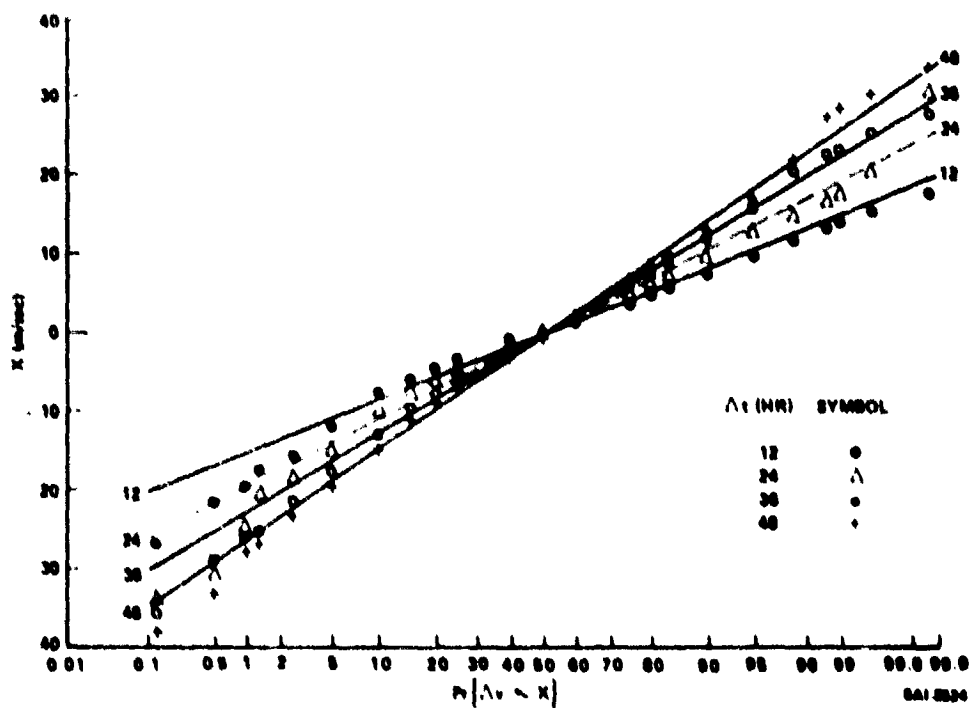


Figure 9. Theoretical (straight lines) and observed plotted points) cumulative probability distribution of zonal wind component change, Δu , with respect to time increment, Δt , during July at 12 km at Cape Kennedy (1956-70)

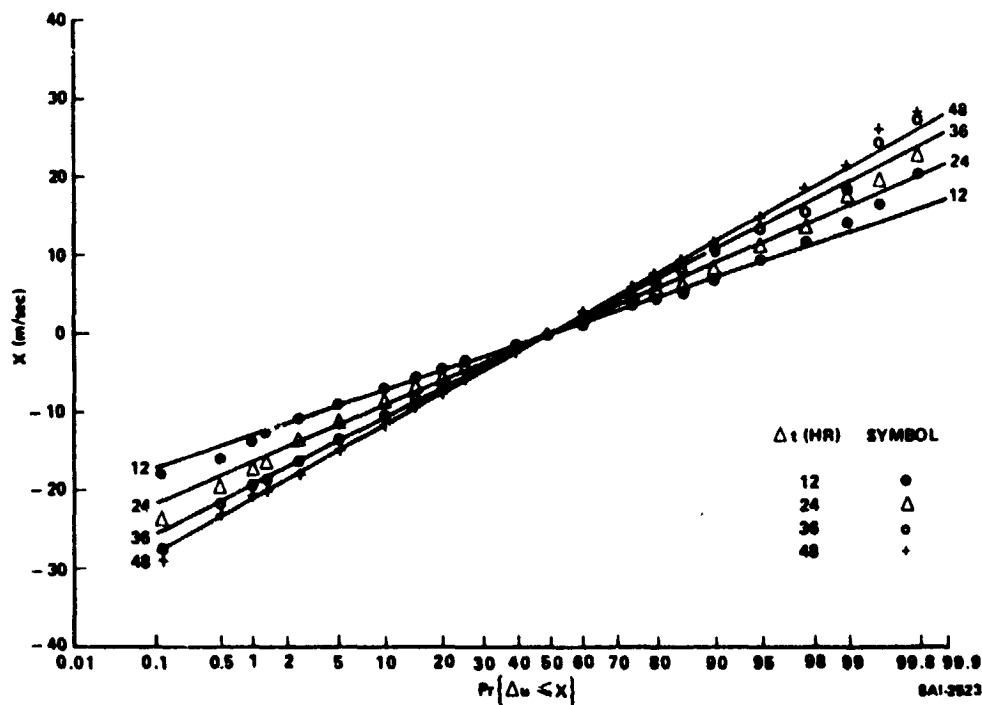


Figure 10. Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of meridional wind component change, Δv , with respect to time increment, τ , during July at 12 km at Cape Kennedy (1956-70)

C. JOINT DISTRIBUTION OF WIND COMPONENT CHANGES WITH RESPECT TO TIME

The joint distribution of zonal and meridional wind component changes with respect to time (Δu and Δv) can be approximated by a bivariate normal distribution. A useful property of such a distribution is that an ellipse can be calculated which contains the end points of a specified percent of vectors having components Δu and Δv . A detailed description of the derivation of probability ellipses and plotting methodology is given by Smith [2]. The five parameters of the bivariate normal distribution of Δu and Δv , calculated for each monthly reference period at Cape Kennedy at 1 km altitude intervals from 0 to 27 km are listed in the appendix.

The degree of approximation of the bivariate normal distribution to the observed distribution can be evaluated by comparison of the observed percentage of vectors which are contained within the ellipse to that predicted by the ellipse at a specified probability level. For example, for a sample of 1,000 vectors, 950 of the vectors should terminate within the 95 percent (theoretical $P = .95$) ellipse calculated from the bivariate statistics of the 1,000 vectors; however, a plot of the 1,000 vectors could indicate that only 45 vectors (observed $P = .955$) terminate within the 95 percent ellipse. For illustration on a linear graph comparison of the theoretical to the observed P is given in terms of the parameter λ_e given by

$$\lambda_e = \sqrt{2} \sqrt{-\ln(1-P)} \quad (26)$$

A comparison of theoretical and observed values of λ_e for January, July and April at 12 km for time intervals of 12, 24, 36 and 48 hours is illustrated in Figures 11 thru 13. Perfect agreement between theoretical and observed λ_e is represented by a line drawn from the origin with a slope, B , equal to 1. The calculated least squares slopes are given in

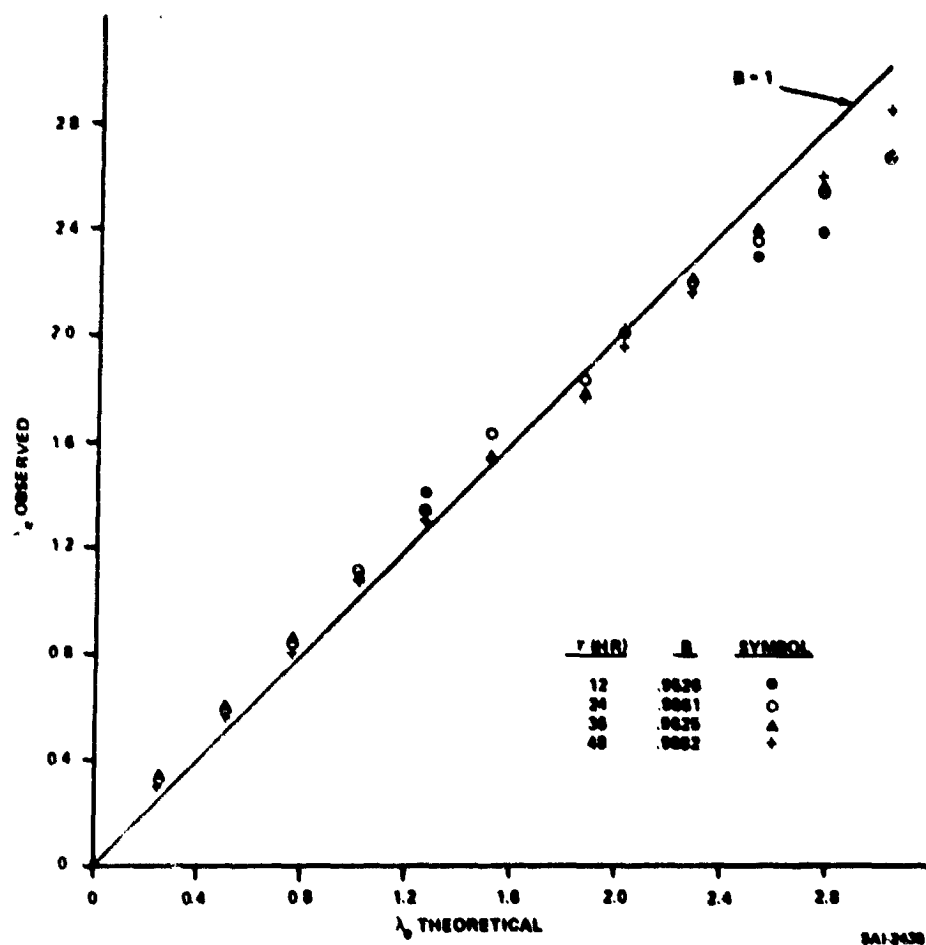


Figure 11. Observed λ_e as a Function of Theoretical λ_e for a Bivariate Normal Distribution of Wind Component Changes (Δu , Δv) with Respect to Time at 12 KM During January (1956-70) at KSC

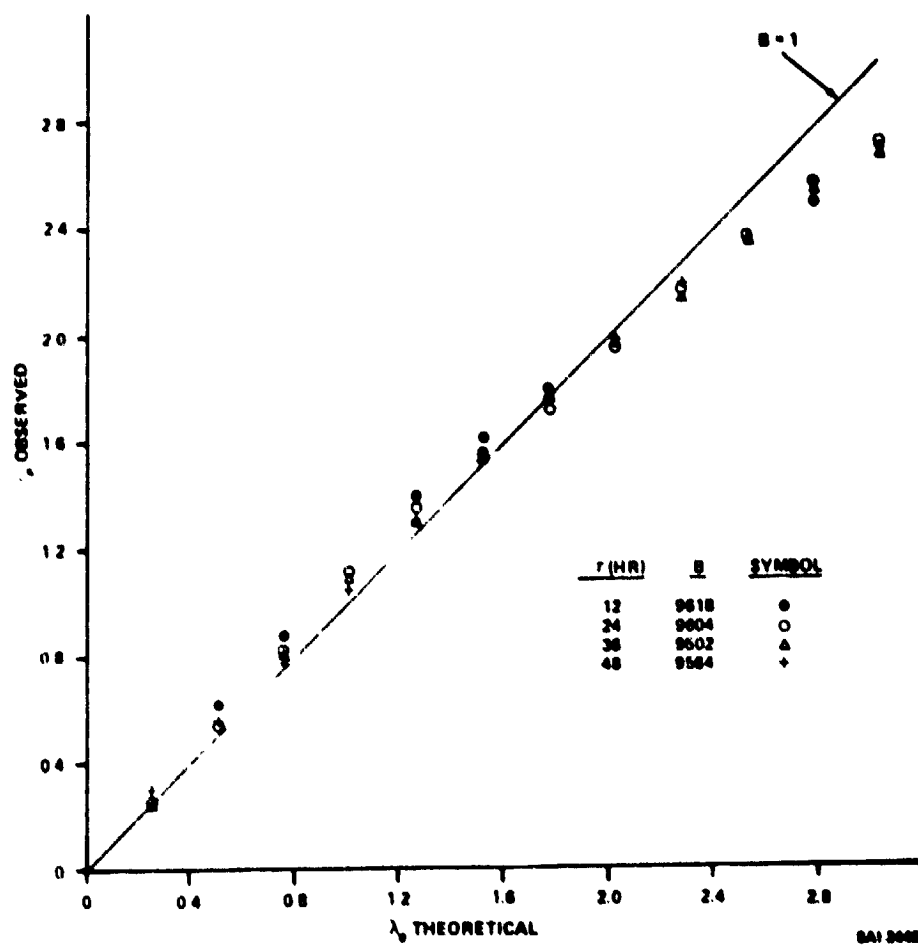


Figure 12. Observed λ_e as a Function of Theoretical λ_e for a Bivariate Normal Distribution of Wind Component Changes (Δu , Δv) with Respect to Time at 12 KM During April (1956-70) at KSC

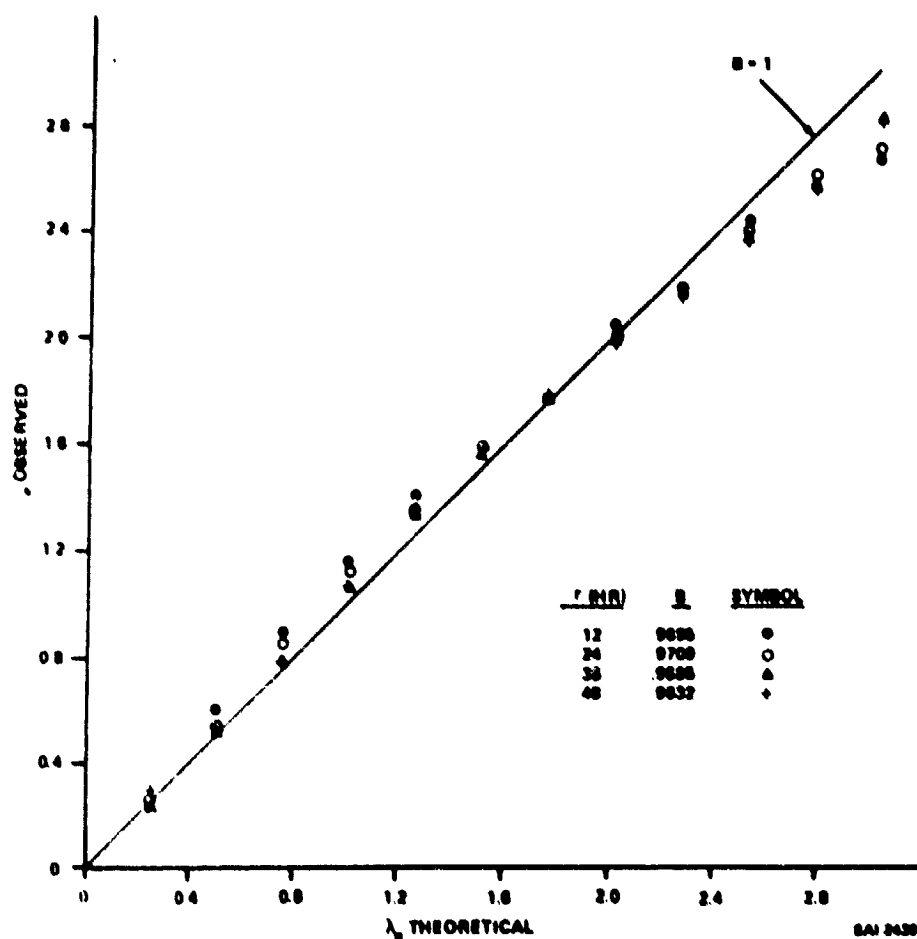


Figure 13. Observed λ_e as a Function of Theoretical λ_e for a Bivariate Normal Distribution of Wind Component Changes (Δu , Δv) with Respect to Time During July (1956-70) at 12 KM at KSC

the figure legend. The plots indicate an agreement between theory and observation for $P \leq .95$ ($\lambda_e \leq 2.4477$). For $P > .95$ the theoretical λ_e exceeds the observed λ_e . The interpretation of these results is that for extreme probabilities the theoretical distributions predict fewer wind change vectors terminating outside the ellipse than is observed. These results may have to be taken into consideration if engineering application of theoretical wind change statistics beyond the 95 percent level is required.

The 95 percent probability ellipses for the joint distribution of wind component changes with respect to time at 6, 12, 18 and 24 km during January, April and July are illustrated in Figure 14; the relatively small changes with respect to time during July, the similarities between April and January and the large changes at 12 km are clearly illustrated.

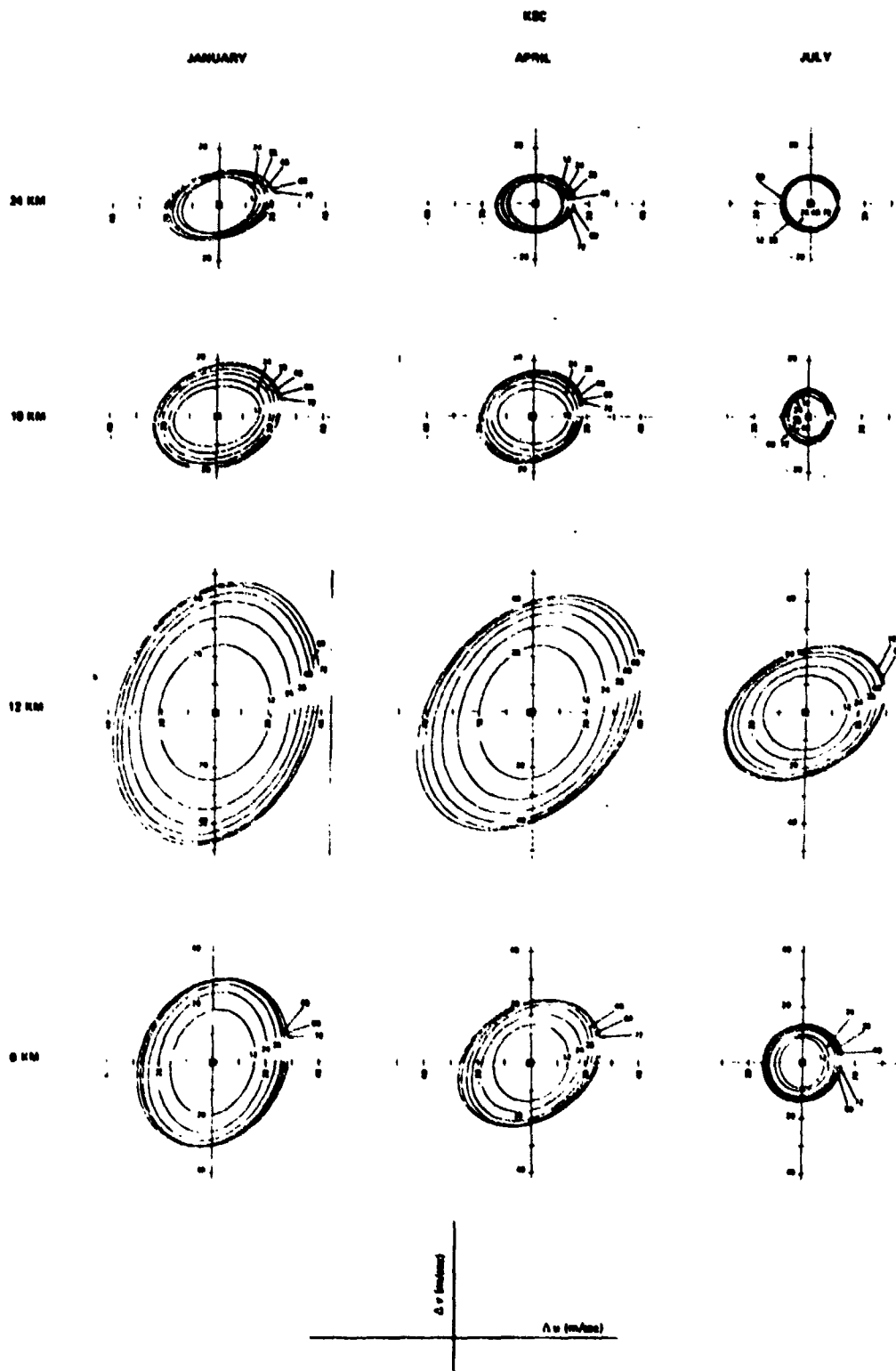


Figure 14. January, April and July 95 Percent Wind Change Ellipses for Time Increments of 12, 24, 36, 48, 60 and 72 Hours at 6, 12, 18 and 24 KM Over KSC

D. MODULUS OF VECTOR WIND CHANGE WITH RESPECT TO TIME

If wind changes with respect to time have a distribution which is bivariate normal, the modulus R , of the wind change vector (defined by Equation 6) has a Rayleigh distribution. Since the Rayleigh distribution cannot be integrated in closed form, numerical integration is required to obtain the cumulative probability distribution. Derivation of the Rayleigh distribution, given the five bivariate normal distribution statistics, requires summation involving products of the modified Bessel function of the first kind. Smith [2] summarizes the basic equations for the Rayleigh distribution derived by Wier [3] and extended by Yadavalli [4] to include the condition for correlated variables. The Rayleigh distribution reduces to the integrable classical form if it is assumed that the components of the vector wind change are independent and that they have zero means and equal standard deviations; the classical Rayleigh probability density function is

$$f(R) = \frac{R}{\sigma^2} \text{EXP} (-R^2/2\sigma^2) \quad R \geq 0 \quad (27)$$

Integration of Equation 27 from zero to a specified value of R yields the cumulative probability that $R \leq R^*$ where,

$$\text{Pr} \{R \leq R^*\} = 1 - \text{EXP} (-R^2/2\sigma^2) \quad R \geq 0 \quad (28)$$

$$\text{where } \sigma = \sigma_{\Delta u} = \sigma_{\Delta v}$$

Since the standard deviation of the component difference can be expressed as a function of the standard deviation of the components (Equations 24 and 25) it follows that

$$\text{Pr} \{R \leq R^*\} = 1 - \text{EXP} \left[- \frac{R^2}{4\sigma_k^2 [1 - \text{EXP} (-k\tau)]} \right] \quad (29)$$

where σ_k and k correspond to either σ_u and b or σ_v and C given in Equations 24 and 25.

An expression for R given a particular probability, $\text{Pr} [R \leq R^*]$, is obtained by solution of Equation 29 to obtain

$$R = \sqrt{2} \lambda_c \sigma_k \sqrt{1 - \text{EXP}(-k\tau)} \quad (30)$$

where λ_c is derived from Equation 26 denoting $\text{Pr} [R \leq R^*]$ by P

The choice of $\sigma_k = \sigma_v$ and $k = c$ (from Equation 25) at 12 km during January, April, and July yields the most accurate approximation of the cumulative Rayleigh distribution obtained by numerical integration of Equation 28 in Reference 1. A comparison of the 99, 95, and 50 percentile modulus of the wind change vector with respect to time based on the Rayleigh (Equation 28, Reference 1) and the classical Rayleigh (Equation 29) is illustrated in Figure 15; the rather good agreement indicated for April at 12 km for time intervals from 12 to 72 hours is attributable to the accuracy of the simplifying assumptions described above.

The remaining question is: How well do these theoretical distributions compare with observed distributions? Comparisons of observed and theoretical values of R for time intervals of 12, 24, 36 and 48 hours at 12 km during January, April and July at KSC are given in Tables 4 through 6; column II of the tables contain R calculated according to the classical Rayleigh distribution with σ equal to the monthly value of σ_v at 12 km and k equal to the decay constant in the monthly exponential least squares fit to the v component autocorrelation function (Equation 23); column I was obtained by numerical integration of the Rayleigh distribution. It is indicated that the observed cumulative distribution agrees fairly well with the theoretical distribution for probabilities less than .95; the observed distribution exceeds the theoretical distribution for probabilities greater than .95.

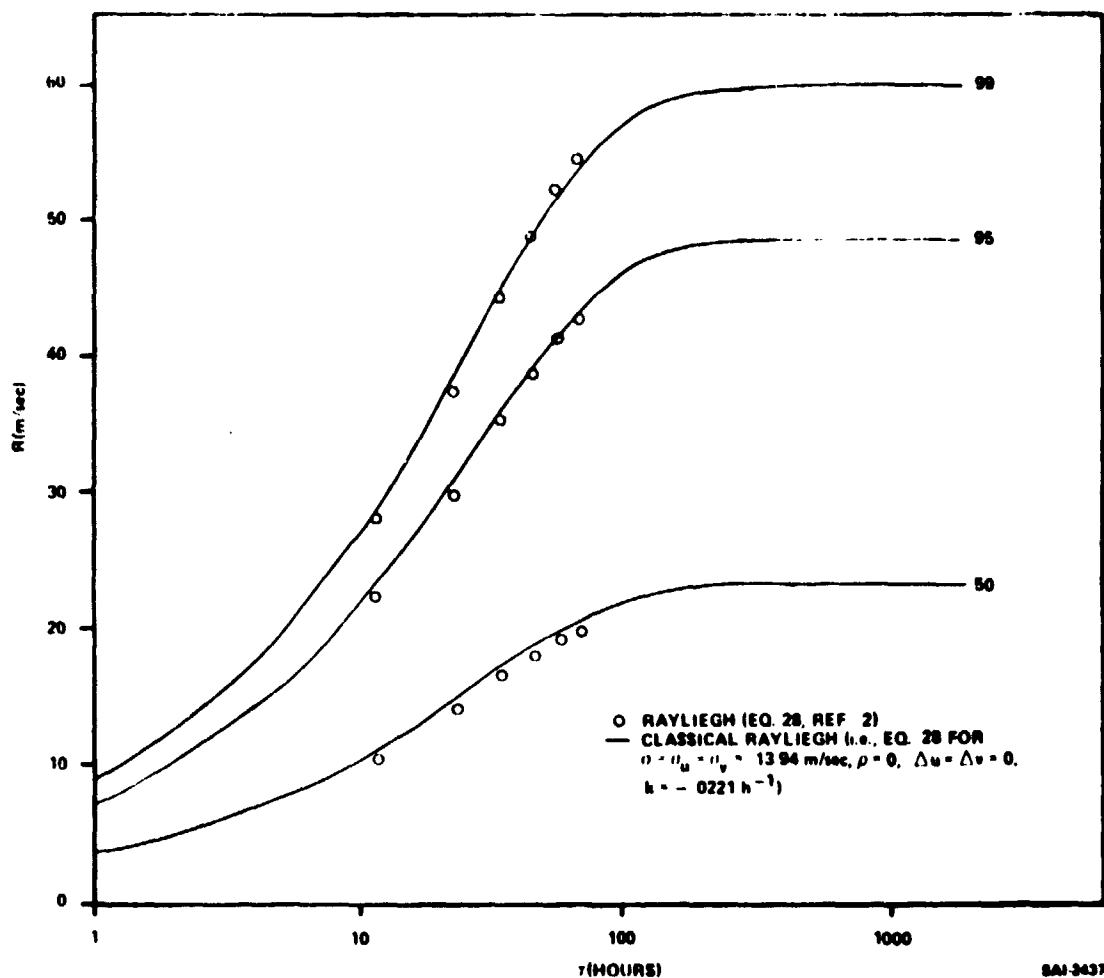


Figure 15. April Theoretical Percentiles of Modulus of Vector Wind Change (R) with Respect to Time Interval (τ) at 12 km Over KSC (1956-70)

$\tau(\text{Hours})$	12				24				36				48			
	$\text{Pr}\{R \leq R^*\}$		OBSERVED		I		II		OBSERVED		I		II		OBSERVED	
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
.50	10.94	13.51	9.62	17.58	15.13	17.47	13.74	17.58	17.47	19.92	18.86	21.39	18.86	21.39	17.76	21.39
.60	12.60	15.54	11.20	20.22	17.43	20.13	16.02	20.13	20.13	22.90	21.74	24.59	21.74	24.59	20.83	24.59
.75	14.26	19.11	21.52	24.86	20.02	24.42	24.88	24.86	24.42	28.17	26.40	30.25	26.40	30.25	26.40	30.25
.80	16.74	20.59	15.72	26.79	23.22	26.88	21.92	26.79	26.88	30.35	29.06	32.59	29.06	32.59	29.18	32.59
.84134	17.92	22.02	17.51	28.66	24.88	28.82	23.92	28.66	28.82	32.46	31.17	34.86	31.17	34.86	31.97	34.86
.850	18.20	22.36	17.77	29.08	25.27	29.27	24.34	29.08	29.27	32.95	31.86	35.38	31.86	35.38	32.34	35.38
.900	20.07	24.63	21.04	32.04	27.92	32.38	28.75	32.04	32.38	36.30	35.04	38.98	35.04	38.98	35.43	38.98
.95	22.96	28.09	25.75	36.55	32.00	37.19	35.21	36.55	37.19	41.41	40.17	44.46	40.17	44.46	42.45	44.46
.97502	25.57	31.18	29.46	40.57	35.71	41.55	39.59	40.57	41.55	45.96	45.03	49.35	45.03	49.35	46.95	49.35
.97725	25.88	31.57	29.81	41.08	36.18	42.09	40.21	41.08	42.09	46.53	45.66	49.97	45.66	49.97	47.92	49.97
.98734	27.88	33.93	33.31	44.14	39.02	45.48	45.23	44.14	45.48	50.01	49.35	53.70	49.35	53.70	53.06	53.70
.99000	28.66	34.83	33.92	45.32	40.13	46.78	49.70	45.32	46.78	51.34	50.77	55.13	50.77	55.13	53.67	55.13
.99500	30.81	37.36	39.12	48.61	43.24	50.46	57.35	48.61	50.46	55.07	54.79	58.13	54.79	58.13	56.78	58.13
.99885	34.57	41.73	41.74	54.28	48.65	56.86	60.74	54.28	56.86	61.50	61.80	66.03	61.80	66.03	61.74	66.03

COLUMN I: CALCULATIONS OF R BASED ON EQS. 28a AND 28b OF REF. 1 AND NUMERICAL INTEGRATION OF THE RAYLIEGH PROBABILITY DENSITY FUNCTION.

COLUMN II: CALCULATIONS OF R BASED ON EQ. 30 OF THIS TEXT AND ASSUMING $\sigma = \sigma_v = 14.64 \text{ m/sec}$, $K = C = .0306 \text{ hr}^{-1}$ AND $\Delta u = \Delta v = 0$.

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Table 4. Theoretical and observed modulus, R, of vector wind change with respect to time for Cape Kennedy during January (1956-70) at 12 km

τ (HOURS)	12			24			36			48		
	I	II	Observed	I	II	Observed	I	II	Observed	I	II	Observed
$P\{R \leq R^*\}$												
50	10.62	11.20	9.28	14.11	14.88	12.63	16.51	17.19	14.81	12.05	18.77	16.76
60	12.23	12.88	10.93	16.26	17.12	14.77	19.02	19.77	17.81	20.82	21.58	19.46
75	15.09	15.84	14.23	20.08	21.06	19.21	23.53	24.32	22.26	25.76	26.54	24.35
80	16.29	17.07	15.62	21.69	22.69	21.13	25.41	26.20	24.06	27.83	28.60	26.88
84134	17.45	18.26	16.87	23.24	24.27	23.14	27.24	28.02	26.59	29.85	30.58	28.66
850	17.67	18.53	17.27	23.55	24.64	23.25	27.64	28.44	27.20	30.32	31.05	29.18
900	19.58	20.42	19.78	26.08	27.14	26.20	30.62	31.34	30.77	33.57	34.21	33.37
95	22.43	23.29	23.71	29.92	30.96	32.67	35.17	36.74	37.78	38.60	39.02	40.20
97502	24.97	25.85	28.76	33.41	34.35	36.26	39.30	39.67	43.51	43.15	43.30	46.76
97725	25.32	26.17	28.31	33.81	34.79	37.13	39.80	40.17	44.52	43.70	43.86	47.51
98734	27.31	28.13	34.20	36.54	37.39	42.30	43.02	43.16	49.61	47.28	47.12	57.80
99000	28.05	28.88	35.00	37.58	38.39	44.00	44.27	44.32	52.00	48.65	48.38	58.67
99500	30.22	30.97	40.50	40.50	41.17	48.25	47.76	47.54	57.75	52.51	51.89	63.25
99865	33.95	34.59	43.78	45.58	45.98	56.57	53.83	53.08	62.78	59.23	57.95	66.78

TABLE 5. THEORETICAL AND OBSERVED MODULUS, R, OF VECTOR WIND CHANGE WITH RESPECT TO TIME FOR CAPE KENNEDY DURING APRIL (1956-70) AT 12 KM

COLUMN I: CALCULATIONS OF R BASED ON EQS. 28a AND 28b OF REF. 1 AND NUMERICAL INTEGRATION OF THE RAYLEIGH PROBABILITY DENSITY FUNCTION

COLUMN II: CALCULATIONS OF R BASED ON EQ. 30 OF THIS TEXT AND ASSUMING $\sigma = \sigma_v = 13.94$ m/sec, $K = C = .0221 \text{ hr}^{-1}$ AND $\Delta u = \Delta v = 0$.

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τ (Hours)		12			24			36			48		
$P\{R \leq R^*\}$		I	II	OBSERVED	I	II	OBSERVED	I	II	OBSERVED	I	II	OBSERVED
.50		7.02	6.52	6.07	8.85	8.56	7.94	10.76	9.77	10.12	11.68	10.55	10.83
.60		8.08	7.49	7.28	10.20	9.84	9.19	12.41	11.23	11.64	13.48	12.13	12.20
.75		9.96	9.22	9.40	12.60	12.10	11.86	15.35	13.81	14.56	16.68	14.93	16.09
.80		10.75	9.93	10.33	13.60	13.04	13.00	16.58	14.88	16.04	18.01	16.08	17.77
.84134		11.52	10.62	11.38	14.57	13.94	14.39	17.78	15.91	17.56	19.33	17.20	19.32
.850		11.70	10.78	11.65	14.79	14.15	14.69	18.05	16.16	17.93	19.64	17.46	19.72
.900		12.89	12.89	13.35	16.36	15.59	16.35	19.97	17.80	20.50	21.75	19.24	22.13
.95		14.77	13.55	15.62	18.75	17.79	19.75	22.95	20.30	24.47	25.00	21.94	26.55
.97502		16.45	15.04	18.95	20.90	19.74	21.98	25.67	22.53	26.72	27.96	24.35	30.55
.97725		16.66	15.23	19.31	21.19	19.99	23.92	25.99	22.81	26.98	28.36	24.66	30.97
.98734		17.91	16.37	20.87	22.86	21.48	28.41	28.10	24.52	30.23	30.67	28.50	33.61
.99000		18.44	16.80	21.85	23.52	22.06	29.70	28.91	25.17	31.85	31.56	27.20	35.35
.99500		19.82	18.02	24.45	25.34	23.66	32.78	31.20	27.00	37.35	34.04	29.18	38.35
.99865		22.24	20.13	30.74	28.52	26.41	38.74	35.18	30.15	42.74	38.44	32.58	44.74

COLUMN 1: CALCULATIONS OF R BASED ON EQS. 28a AND 28b OF REF. 1 AND NUMERICAL INTEGRATION OF THE RAYLIEGH PROBABILITY DENSITY FUNCTION.

COLUMN II: CALCULATIONS OF R BASED ON EQ. 30 OF THIS TEXT AND ASSUMING $\sigma = \sigma_y = 7.43 \text{ m/sec}$, $K = C = .0271 \text{ hr}^{-1}$ AND $\Delta u = \Delta v = 0$.

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Table 6. Theoretical and observed modulus, R, of vector wind change with respect to time for Cape Kennedy during July (1956-70) at 12 km

E. CONDITIONAL VECTOR WIND ELLIPSES

Prior knowledge that environmental constraints necessary to assure the success of a space vehicle launch will be satisfied implies that there is a capability for prediction of environmental parameters; the prediction can be based on knowledge of conditions prior to launch. With regard to winds aloft, prior conditions are typically based on Rawinsonde or Jimsphere wind profiles. A typical question that could be posed before launch is: Given a measurement of the wind vector 12 hours prior to launch at 12 km, will the wind vector at launch time be within the monthly 95 percent reference month wind ellipse? A question of this type can be answered if the distribution of vector wind components at an initial time, T_0 , and at a future time, T_1 , can be approximated by a quadrivariate normal distribution. Given the components of the vector at T_0 , the conditional distribution of the vector wind at T_1 is bivariate normal. Smith [1] describes the derivation of the conditional bivariate normal distribution and documents the computer program used in this investigation for calculation of these distributions. Figures 16 thru 18 illustrate the 95 percent conditional bivariate normal distributions at 12 km that have been calculated for time increments of 12, 24, 36, 48, 60 and 72 hours for the months of January, April and July; five vectors were selected as given initial conditions for calculations of the conditional ellipses. The components of the vectors are defined below:

1. Monthly component means given by Falls [4].
2. Maximum zonal wind and the corresponding meridional wind from the monthly 95 percent vector wind ellipse.
3. Minimum zonal wind and the corresponding meridional wind from the monthly 95 percent vector wind ellipse.
4. Maximum meridional wind and the corresponding zonal wind from the monthly 95 percent vector wind ellipse.
5. Minimum meridional wind and the corresponding zonal wind from the monthly 95 percent vector wind ellipse.

The conditional ellipses illustrated at the center of Figures 16 through 18 show that if the observed wind vector has components equivalent to the monthly mean components (Condition 1) then 95 percent of the wind vectors after elapsed times as large as 72 hours will fall within the monthly 95 percent ellipse. Therefore satisfaction of a launch constraint which states that the wind vector must be included within the 95 percent monthly ellipse would be assured for periods as long as 72 hours following an observation of a wind vector having components which correspond to the monthly means. The conditional ellipses based on selection of given wind vectors that terminate on the monthly 95 percent ellipse (conditions 2 through 5) have a significant proportion of their area lying outside the monthly 95 percent ellipse; as the time increment increases this proportion decreases but remains significant for a time increment as large as 72 hours. This implies that a significant proportion of wind vectors will not satisfy a launch constraint based on the 95 percent wind ellipse for periods as long as 72 hours (or longer if these calculations are extended) following an observation of a wind vector which terminates on the 95 percent ellipse.

The wind direction characteristics of a wind ellipse can be described in terms of the angles associated with wind vectors constructed between the origin and the center of the ellipse (at the component means) and between the origin and the two tangent points to the ellipse. The three vectors constructed in this manner and the angles θ_A , θ_B , θ_E , $\Delta\theta_1$ and $\Delta\theta_2$ are illustrated in Figure 19; the range of wind angles, θ_R , is θ_A to θ_B . The angles θ_R , θ_E , $\Delta\theta_1$ and $\Delta\theta_2$ calculated from five 95 percent conditional ellipse for April at 6, 12, 18 and 24 km are listed in Table 7.

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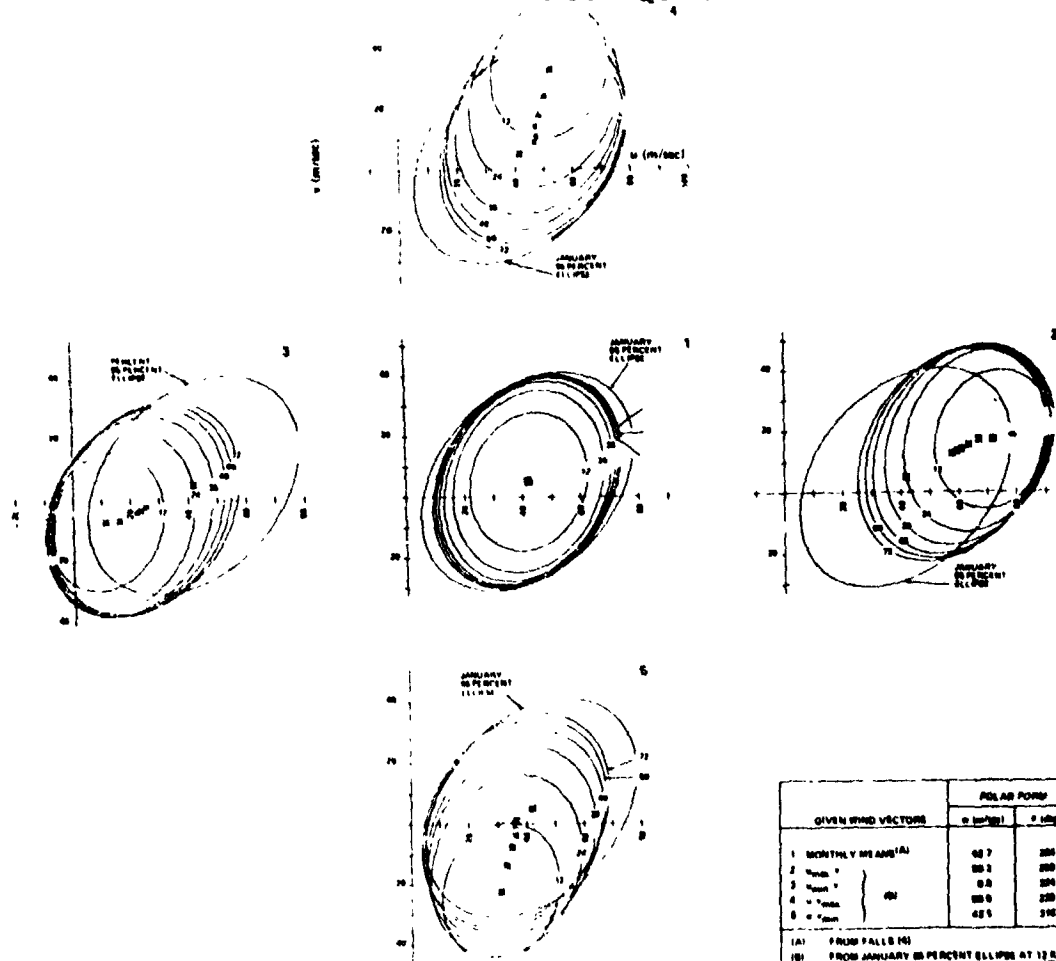


Figure 16. January conditional 95 percent wind ellipses at 12 km for time increments of 12, 24, 36, 48, 60 and 72 hours at Cape Kennedy (1956-70)

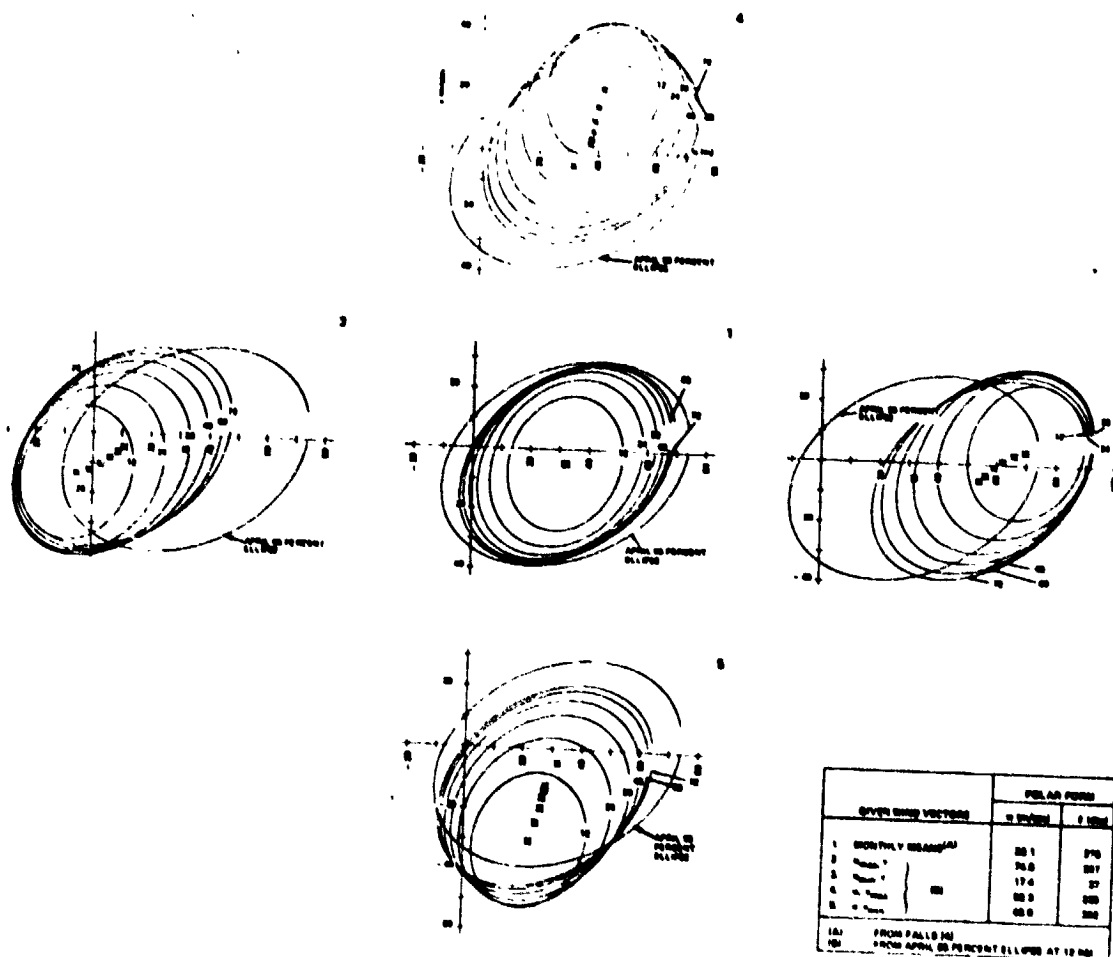


Figure 17. April conditional 95 percent wind ellipses at 12 km for time increments of 12, 24, 36, 48, 60 and 72 hours at Cape Kennedy (1956-70)

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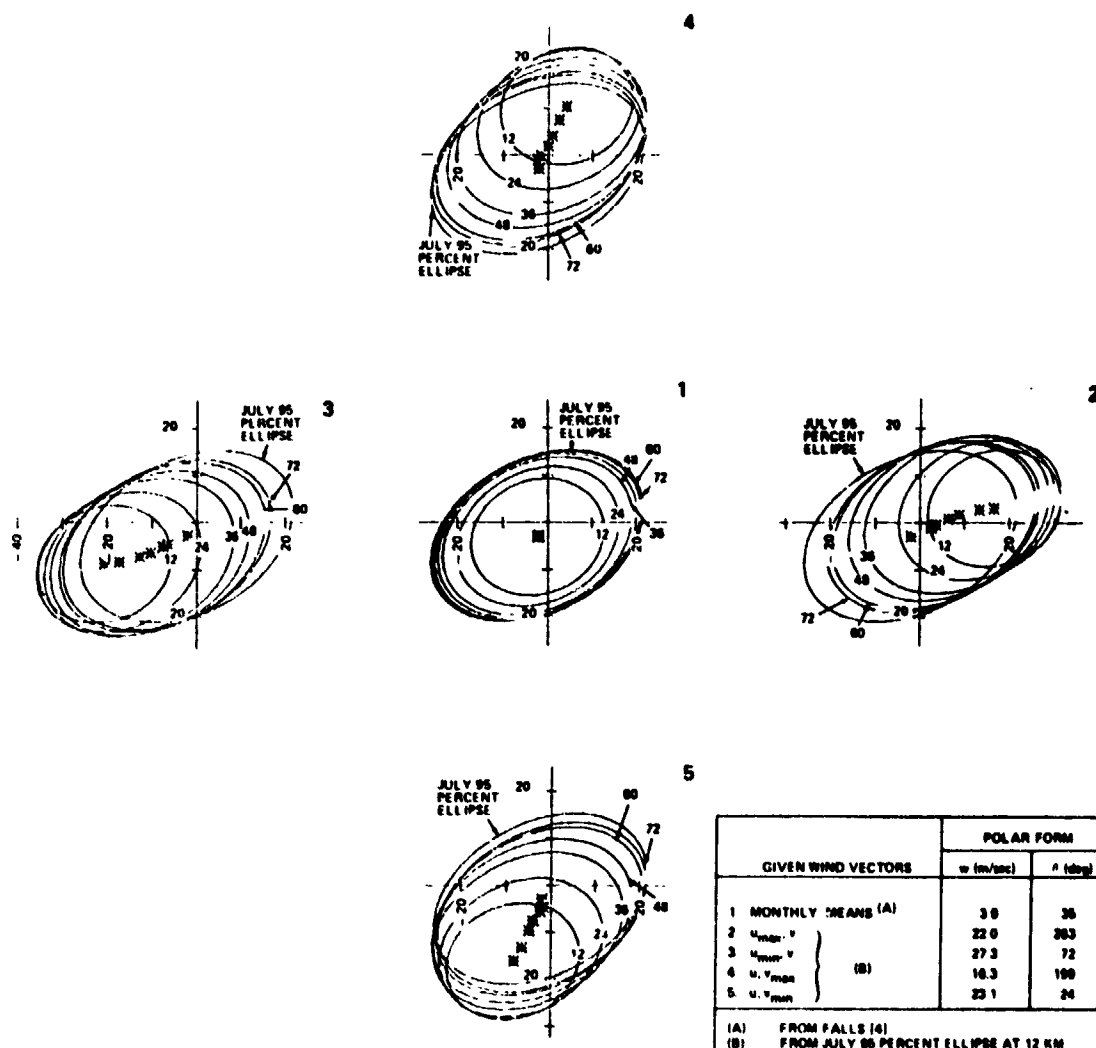


Figure 18. July conditional 95 percent wind ellipses at 12 km for time increments of 12, 24, 36, 48, 60 and 72 hours at Cape Kennedy (1956-70)

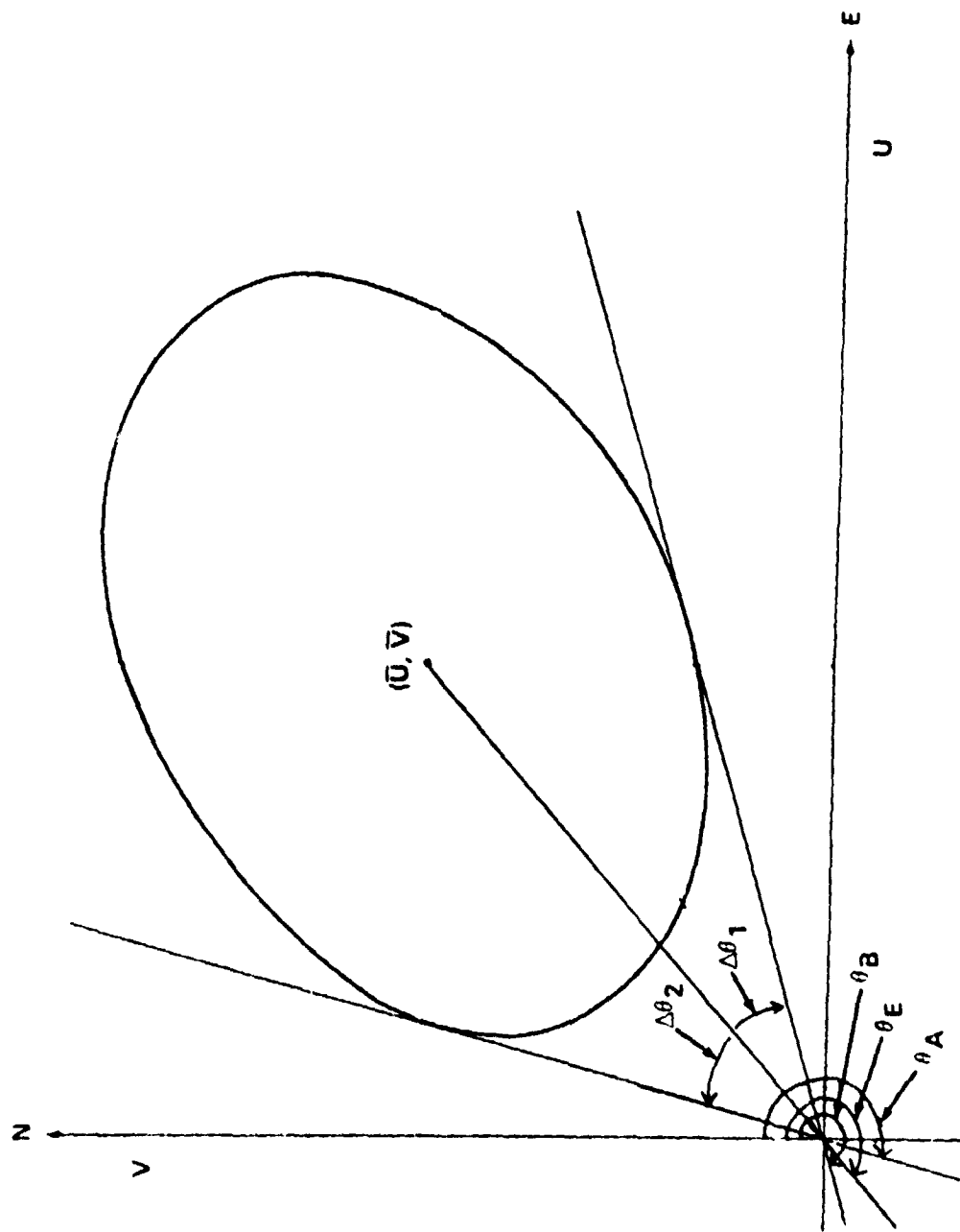


Figure 19. Wind Direction Characteristics of a Wind Probability Ellipse

Table 7. Wind Direction Characteristics of 95 Percent Conditional Wind Ellipses During April for an Elapsed Time (τ) of 12 Hours at Cape Kennedy (1956-70)

Characteristic	Altitude (KM) Condition (A)	1	6	12	18	24
θ_R (Deg)	1	*	212-351	239-322	*	*
	2	201-298	246-287	249-284	242-284	*
	3	8-148	*	*	*	42-125
	4	*	186-280	219-272	196-277	*
	5	*	276-358	286-355	283-27	*
θ_E (Deg)	1	*	277	278	*	*
	2	251	266	266	264	*
	3	79	*	*	*	84
	4	*	234	243	244	*
	5	*	316	323	326	*
$\Delta\theta_1, \Delta\theta_2$ (Deg, Deg)	1	*	-65, 74	-39, 44	*	*
	2	-50, 47	-20, 21	-17, 20	-22, 20	*
	3	-71, 69	*	*	*	-42, 41
	4	*	-48, 46	-24, 29	-48, 33	*
	5	*	-49, 42	-37, 32	-43, 61	*

(A)	Condition (2-5 from April 95 percent ellipse)	m/sec	m/sec
1 (B)	\bar{u}	\bar{v}	31.73
2	u_{max}	v	74.35
3	u_{min}	v	-10.53
4	u	v_{max}	43.30
5	u	v_{min}	20.52
			-38.85

(B) Monthly means from Falls [Ref. 4]; these vectors are expressed in polar form in the legend of Figure 17.

* 95 percent conditional ellipse covers all quadrants

F. WIND CHANGES WITH RESPECT TO TIME INCREMENTS LESS THAN SIX-HOURS

The only data suitable for an analysis of wind changes aloft at Cape Kennedy for small time increments (<6 hours) are the sequential Jimsphere wind profiles obtained during the period 1964 thru 1970 [5]. A measurement program which began in December 1976 at Cape Kennedy will provide ten soundings (six Jimsphere and four Rawinsonde) per day one day a week for a 20 week period. These data will be analyzed in Phase II of this study.

Wind changes have been calculated at 6 and 12 km over Cape Kennedy from the January, April and July Jimsphere sequential runs. The list of dates and number of soundings for each sequential set is given in Table 8. Wind changes have been calculated from these data in terms of component change (Δu , Δv) and the modulus, R , of vector change (Eq. 6) with respect to time; the calculated Δu , Δv and R as a function of time increment τ (denoted by "Delta T") are illustrated in Figures 20 and 21. The wind change data plotted in Figures 20 and 21 do not line up at exact time intervals because the Jimsphere soundings comprising the sequential sets are not equally spaced with respect to time. Therefore, calculation of wind change statistics utilizing this data set requires the use of grouped data. The means and standard deviations of component differences for January, April and July at 6 and 12 km listed in Table 9 were calculated from data grouped by 1 hour intervals of τ centered at $\tau = 1, 2 \dots 5$ hours. The statistics do not indicate a strong systematic variation as a function of τ . This is attributed to small sample size and non-uniformity of sample size as a function of time increment. Ninety-five percent confidence intervals for $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$, calculated from these sample estimates, and theoretical values calculated from Equations 24 and 25 are compared in Figures 22 and 23; it is illustrated that in most cases the theoretical values are within the 95 percent confidence band.

Table 8. January, April and July
Sequential Jimsphere Runs
at Cape Kennedy

Month	Date	Number of Soundings
January	13-14, 1965	11
	27, 1965	4
	21-22, 1968	7
	20-21, 1969	4
	22-23, 1970	7
	TOTAL	33
April	13, 1965	9
	27, 1965	6
	4, 1966	4
	5- 6, 1966	12
	6, 1966	4
	7- 8, 1966	14
	16-17, 1967	10
	18, 1967	8
	4, 1968	6
	11, 1970	4
	TOTAL	77
July	2, 1965	6
	29-30, 1965	6
	1- 3, 1966	5
	12-13, 1967	11
	13-14, 1967	6
	21, 1967	4
	25-26, 1968	7
	16, 1969	3
	17, 1970	1
	TOTAL	52

JULY

6 KM
APRIL

JANUARY

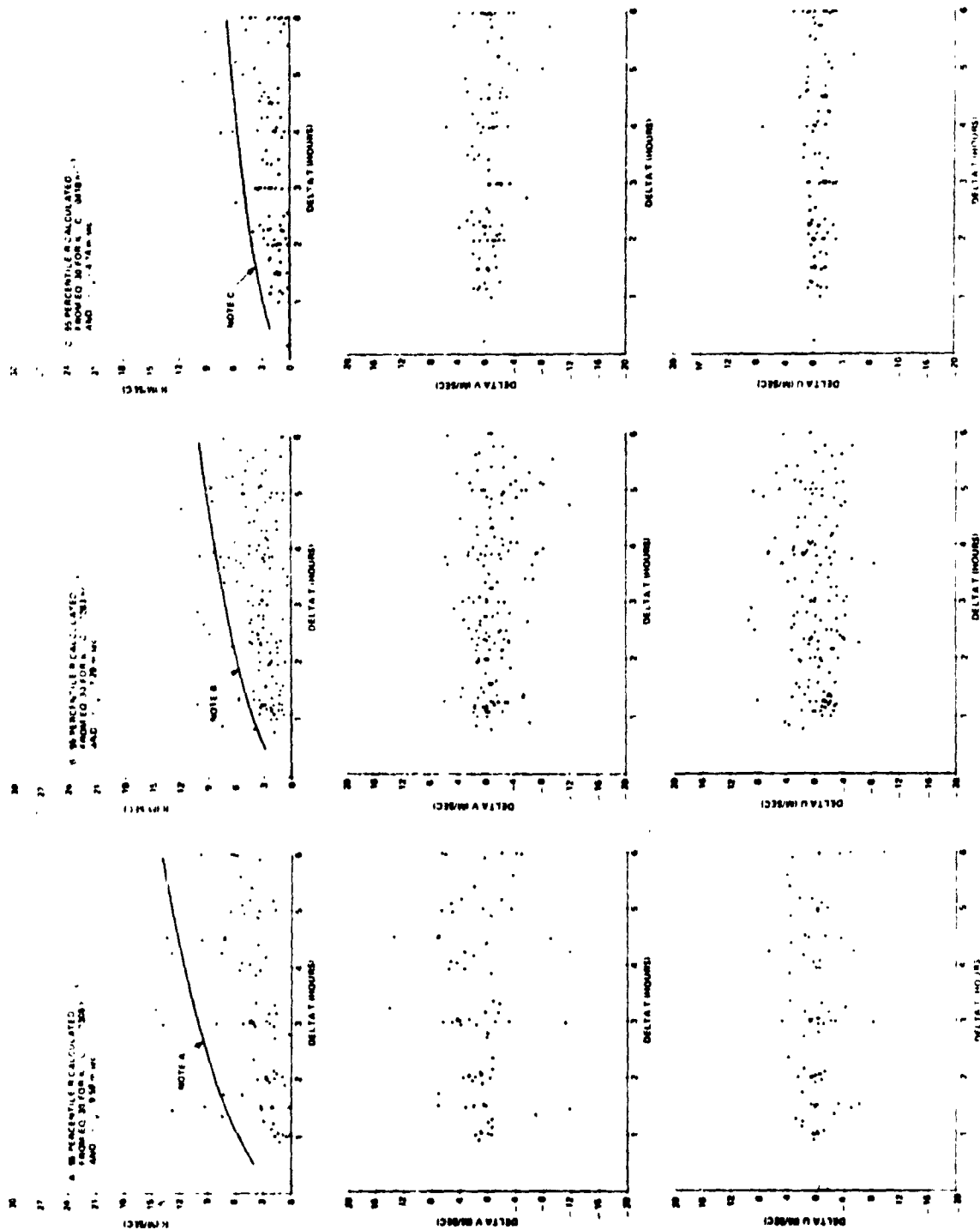


Figure 20. January, April and July Wind Component Change and Modulus of Vector Wind Change with Respect to Time at 6 km from Jimsphere Wind Profiles at Cape Kennedy

JULY

**12 KM
APRIL**

JANUARY

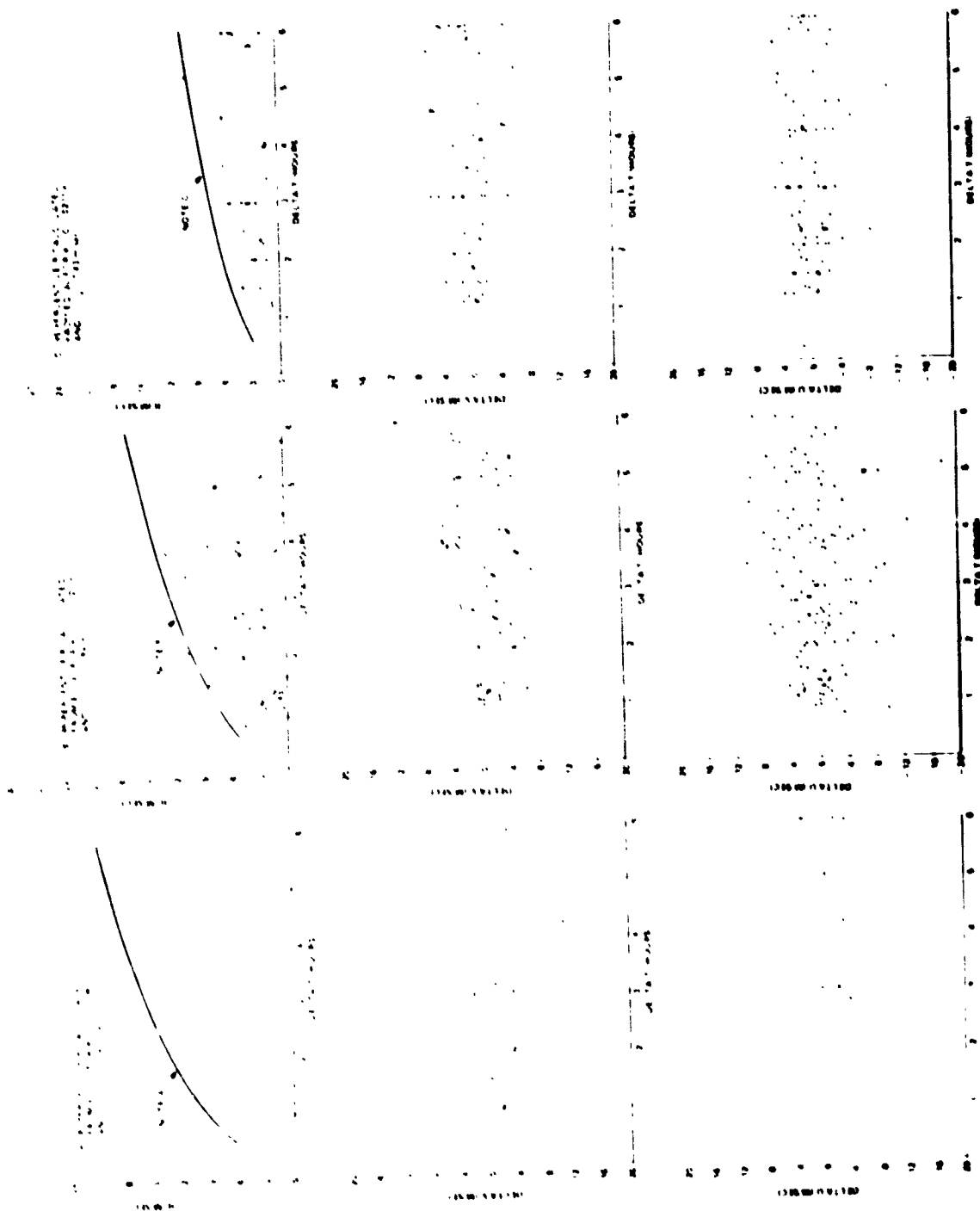


Figure 21. January, April and July Wind Component Change and Modulus of Vector Wind Change with Respect to Time at 12 km from Jimsphere Wind Profiles at Cape Kennedy

Table 3. January, April and July Bivariate Normal Statistics of Component Differences Calculated from Sequential Limb Sphere Data at 6 and 12 km at Cape Kennedy.

		6 km					12 km				
Month	Host, m/sec	\bar{U}	\bar{V}	$P(\bar{U}, \bar{V})$	$\bar{U}V$	$\bar{U}V$	Sample Size	\bar{U}	\bar{V}	$R(\bar{U}, \bar{V})$	Sample Size
		m/sec	m/sec		m/sec	m/sec		m/sec	m/sec		
January	1	-.59	2.64	.75	-.84	4.06	13	1.15	2.68	.28	10
	2	.02	2.25	-.44	1.91	2.27	17	.47	1.96	-.48	12
	3	-.46	2.91	.38	1.54	5.11	18	-.12	3.11	-.06	13
	4	.68	3.54	.60	.29	6.03	10	2.01	4.12	.64	7
	5	.78	1.80	-.26	3.76	4.70	12	.12	1.68	.04	7
April	1	-.19	2.54	.28	-.50	2.58	29	-.01	2.76	-.32	28
	2	-.59	2.32	.05	-.41	1.68	31	.25	3.80	.33	31
	3	.60	3.79	.13	-.43	2.74	29	.10	4.55	.25	30
	4	.62	3.39	.21	-.75	3.49	31	.64	4.28	.24	31
	5	.76	3.44	.22	-2.33	3.67	28	.13	6.26	-.03	24
July	1	-.61	.87	-.32	.45	.93	7	.37	2.18	.09	7
	2	-.81	1.05	.19	.04	1.59	28	-.34	2.40	-.07	28
	3	-.78	1.35	.15	-1.17	1.84	18	.98	2.51	-.20	18
	4	-.13	2.26	-.12	.53	2.10	16	.61	2.77	.09	16
	5	-.65	2.03	.24	-1.60	2.77	14	-1.57	4.78	-.00	14

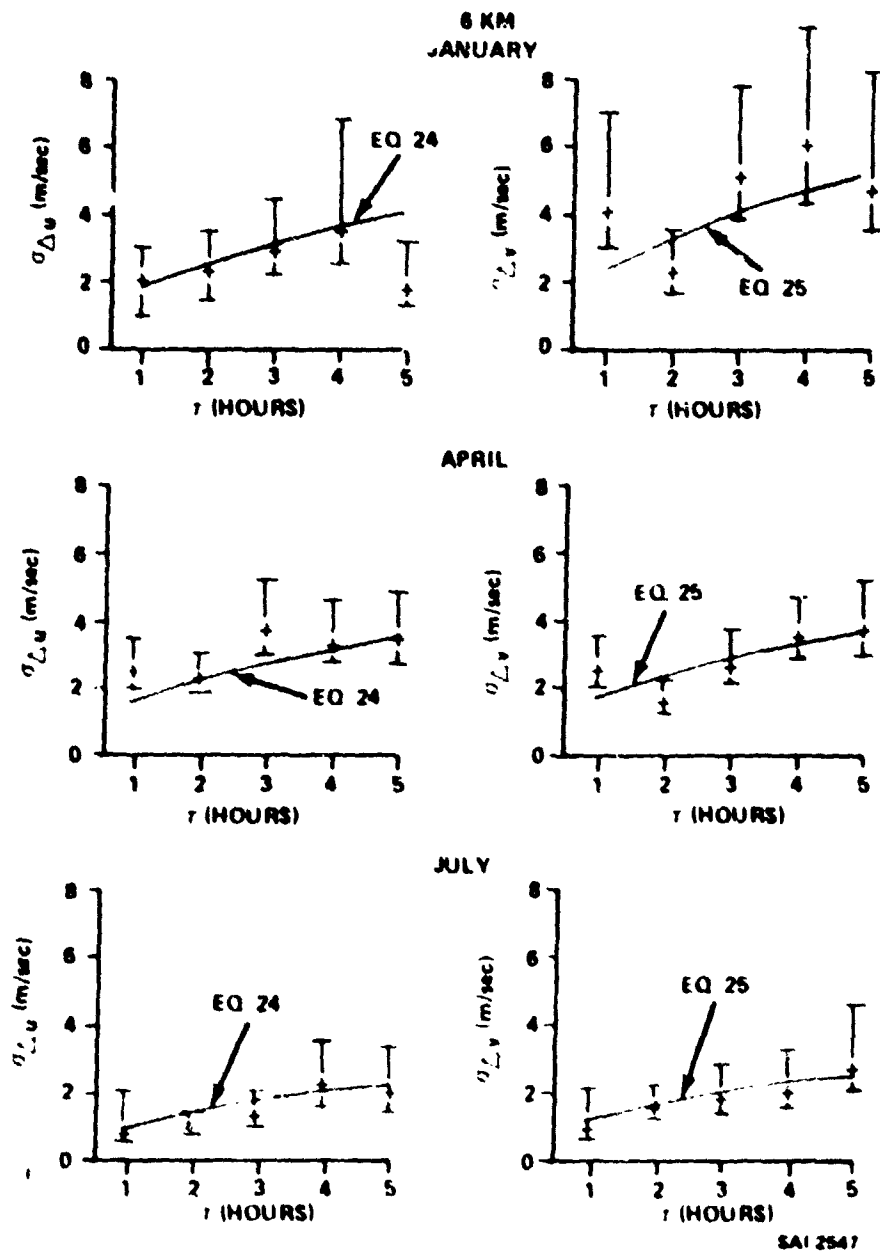


Figure 22. January, April and July 95 Percent Error Bounds of Sample Estimates of $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ at 6 km from Jimsphere Data and Theoretical Values Obtained from Equations 24 and 25.

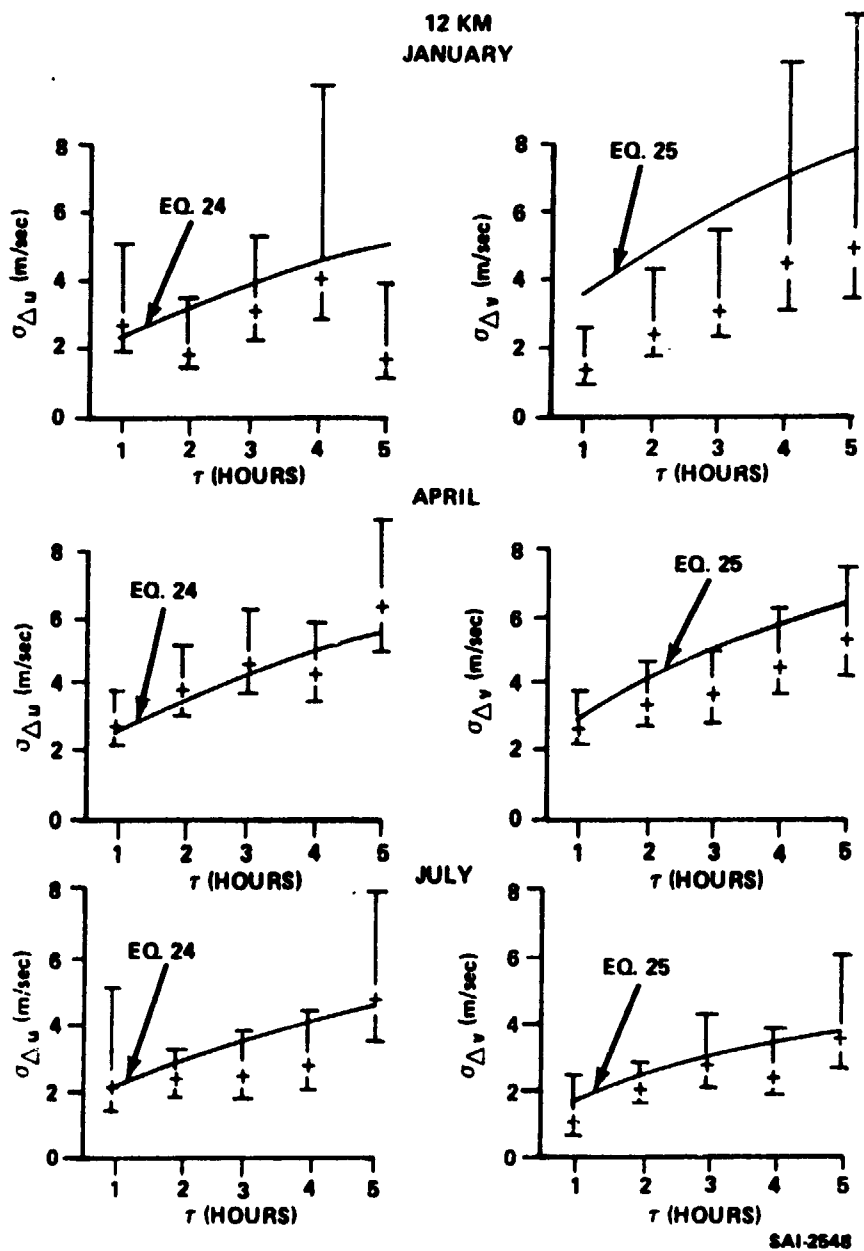


Figure 23. January, April and July 95 percent Error Bounds of Sample Estimates of $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ at 12 km from Jimsphere Data and Theoretical Values Obtained from Equations 24 and 25

G. VECTOR WIND SHEAR CHANGE WITH RESPECT TO TIME

Vector wind shear change with respect to time can be represented by a bivariate normal distribution; the five statistics of the distribution are the means, \bar{Au}' and \bar{Av}' , the standard deviations, σ_{Au}' and σ_{Av}' , and the correlation coefficient $R(Au', Av')$. Calculations of these statistics for 1 km shear at 12 km supplied by MSFC Space Sciences Laboratory, were reorganized for utilization in this study; the statistics for January, April and July are listed in Table 10. The 95 percent wind shear change ellipses derived from these bivariate normal statistics are illustrated in Figure 24. It is indicated that the 95 percentile shear change is largest in January and smallest in July; the 95 percentile wind shear change is approximately 25 percent larger in January in comparison with April. The rather close spacing of the ellipses during these months illustrates the fact that wind change is relatively independent of time increment for time increments from 12 to 72 hours; therefore, most of the 1 km wind shear change at 12 km over a 72 hour period occurs within the first twelve hours.

The January, April and July 95 percent 1 km wind shear ellipses at 12 km are also illustrated in Figure 24. It is indicated that the 95 percentile 1 km wind shear is smaller than the 95 percent 1 km wind shear change over time increments from 12 to 72 hours.

Table 10. Bivariate Normal Statistics* of 1 km Vector
Wind Shear Change with Respect to Time at
12 km Over Cape Kennedy During January,
April and July

1956-67 (Period of Record)						
	$\overline{\Delta u'}$	$\sigma_{\Delta u'}$	$R(\Delta u', \Delta v')$	$\overline{\Delta v'}$	$\sigma_{\Delta v'}$	
	(m/sec)	(m/sec)		(m/sec)	(m/sec)	
January	12	-.01	7.86	.1584	.02	7.55
	24	-.02	8.64	.2166	.06	7.84
	36	-.06	9.15	.2391	.06	7.93
	48	-.03	9.04	.2364	.13	7.85
	60	-.13	8.76	.1260	.08	7.67
1956-70 (Period of Record)						
April	12	-.06	5.90	-.0509	-.07	5.62
	24	-.11	6.31	-.0140	-.10	6.01
	36	-.13	6.49	.0459	-.14	5.85
	48	-.19	6.49	-.0019	-.15	6.15
	60	-.25	6.86	-.0194	-.18	6.27
1956-67 (Period of Record)						
July	12	-.03	3.89	-.0938	-.02	3.84
	24	-.08	4.09	-.0678	.00	3.82
	36	-.12	4.22	-.0385	.01	4.06
	48	-.15	4.14	-.0405	.01	4.18
	60	-.14	4.33	-.0333	.01	4.05

*Calculated from twice daily Rawinsonde data

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OF POOR QUALITY

*SCALES DEFINED AT RIGHT

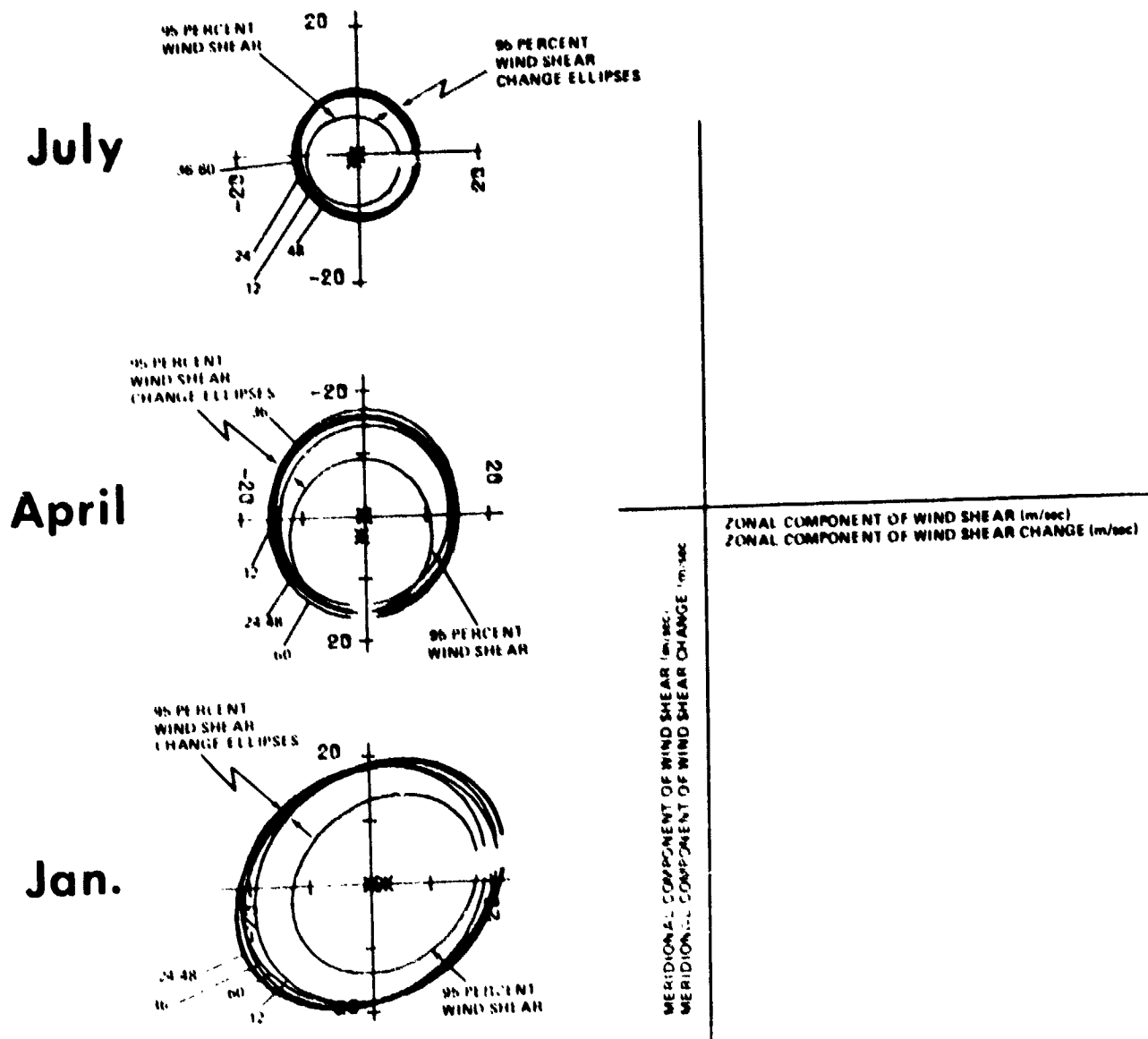


Figure 21. January, April and July 95 Percent Ellipses
for 1 km Wind Shear and 1 km Wind Shear Change
After 12, 24, 36, 48 and 60 Hours at 12 km
at Cape Kennedy (1956-70)

IV. CONCLUSIONS, REMARKS AND RECOMMENDATIONS

The analysis presented in the preceding section for selected months and altitudes illustrates how various theoretical distribution functions can be used for calculation of wind change with respect to time at Cape Kennedy, Florida. The calculations can be made by utilization of the statistics given in the appendix for any reference month at 1 km altitude increments from 0 to 27 km.

The basic underlying assumption for the calculation of the distributions is that the joint distribution of the four variables represented by the components of the wind vector at any initial time and after a specified elapsed time is quadrivariate normal. If the wind vector is specified at an initial time, then the conditional joint distribution of the wind components at a future time is bivariate normal. Since each of the variables of the quadrivariate normal distribution is normal and the difference of two normal distributions is normal, it follows that wind component change is also normal and the joint distribution of zonal and meridional wind change is bivariate normal. The modulus of bivariate normally distributed variables has a Rayleigh distribution. Therefore, the modulus of vector wind change with respect to time is Rayleigh.

Sample distributions based on reference month Rawinsonde data obtained during 1956-70 agree reasonably well with the aforementioned theoretical distributions.

The standard deviation of wind component change with respect to time is the only statistic required for determination of the theoretical probability distribution (normal with zero mean) of wind component change. It has been shown that over a large range of altitudes that this statistic can be estimated from wind component standard deviation and the decay constant of the component theoretical autocorrelation function (Figures 2-4). The assumption of exponential decay of the autocorrelation function is reasonably accurate in most instances to time increments as large as 60 hours

during January, April and July. The exponential decay model is not supported by the autocorrelation data at high altitude during January and July (refer to appendix, computation set A, $R(X,XP)$ and $R(Y,YP)$).

The observed modulus of vector wind change with respect to time is systematically larger than the predicted modulus (Section III.C.) for probabilities greater than .95. This may be attributable to inadequacy of the theory or inaccuracies of the data which affect the observed distribution at the extreme probabilities. If the theoretical distribution at extreme probabilities is to be used in engineering applications, it will be necessary to explain these systematic differences.

Wind change statistics calculated from Jimsphere data for small time intervals ($1 \leq \tau \leq 5$ hours) at Cape Kennedy reveal that extension of the theoretical calculation of wind component standard deviation described above to small time increments is valid at 6 and 12 km during January, April and July. A new sampling program at Cape Kennedy which began in December 1976 will provide six additional Jimsphere runs for each of 20 days during one day per week thru April 1977. These data will be used in Phase II of this study in the further analysis of wind change for small time intervals.

SAI is presently under contract (continuation of NAS8-32226) to extend this study of winds aloft temporal variability to include:

- Analysis of year to year variability
- Establishment of wind change statistics for Vandenberg AFB
- Development and application of a classification technique for identification of homogeneous winds aloft data sets
- Examination of relations between dynamic stability, wind shears and gusts at KSC.

The final report under the expanded study will be published in December 1977.

V. REFERENCES

1. Smith, O.E.: Vector Wind and Vector Wind Shear Models 0-27 km Altitude for Cape Kennedy, Florida, and Vandenberg AFB, California. NASA TMX-73319, July 1976.
2. Weil, H.: The Distribution of Radial Error. Ann. of Mathematical Statistics, Vol. 25, 1954, pp. 168-170.
3. Yadavalli, S. V.: On Applications of Some Results Related to Bivariate Gaussian Density Distribution Functions. Int. J. of Control, 1st Series, Vol. 5, No. 2, 1967, pp. 191-194.
4. Falls, L.W.: Normal Probabilities for Cape Kennedy Wind Components - Monthly Reference Periods for all Flight Azimuths - Altitudes 0 to 70 kilometers. NASA TMX-64771, April 16, 1973.
5. Johnson, D. and M. Alexander: Seventy Sequential Jimsphere Wind Profile Data Sets for ETR (Cape Kennedy) December 1964 thru July 1970. NASA ES-41, August, 1976.

APPENDIX I

This appendix contains two sets of reference month quadravariate and conditional bivariate normal statistics of variables X, Y, XP and YP, at 1 km intervals from 0 to 27 km. The statistics were calculated from 15 years (1956-70) of twice daily KSC serially complete Rawinsonde data. The notation for the variable given in Section II of this report differs from the notation established for the computer output given herein; the notations are compared in Table I-1.

TABLE I-1. NOTATION OF VARIABLES

<u>COMPUTATION SET</u>				
A			B	
Variable	Text (Sect. II)	Computer Output	Text (Sect. II)	Computer Output
X	u_0	$u(\text{at } T)$	u_0	$u(\text{at } T)$
Y	v_0	$v(\text{at } T)$	v_0	$v(\text{at } T)$
XP	u_1	$u(\text{at } T+DT)$	$u_1 - u_0$ $= \Delta u$	$u(\text{at } T+DT)$ $-u(\text{at } T)$
YP	v_1	$v(\text{at } T+DT)$	$v_1 - v_0$ $= \Delta v$	$v(\text{at } T+DT)$ $-v(\text{at } T)$

Table I-1 shows that the quadravariate statistics of computation set "A" are for wind components at an initial time and after a specified time increment; the statistics for set "B" are for wind components at an initial time and wind component change after a specified time increment. The reference month quadravariate normal statistics at a particular altitude for six time increments (12, 24, 36, 48, 60 and 72 hours) are listed in the lower left of each page of computer listing; the six sets of conditional bivariate normal statistics corresponding to the six time increments are listed in the lower right. The data were conditioned on monthly means given by Falls [4]. The derivation of the conditional bivariate

normal statistics for any other given vector involves recalculation of the conditional means according to equations I-1 and I-2; the standard deviations and correlation coefficients do not have to be recalculated because they are independent of the given wind vector.

$$\bar{x}_c | x p^* = \bar{x} + \frac{[(R(x, x p) - R(x, y p) R(x p, y p)) (x p^* - \bar{x p}) (\sigma_x / \sigma_{x p}) + (R(x, y p) - R(x, x p) R(x p, y p)) (y p^* - \bar{y p}) (\sigma_x / \sigma_{y p})]}{1 - [R(x p, y p)]^2} \quad (I-1)$$

$$\bar{y}_c | y p^* = \bar{y} + \frac{[(R(y, x p) - R(y, y p) R(x p, y p)) (x p^* - \bar{x p}) (\sigma_y / \sigma_{x p}) + (R(y, y p) - R(y, x p) R(x p, y p)) (y p^* - \bar{y p}) (\sigma_y / \sigma_{y p})]}{1 - [R(x p, y p)]^2} \quad (I-2)$$

where, \bar{x}_c and \bar{y}_c are the mean components of the conditional distribution,

$x p^*$ and $y p^*$ are the components of the given vector and

σ_x , σ_y , $\sigma_{x p}$ and $\sigma_{y p}$ are equivalent to S.D.x, S.D.y, S.D. $x p$ and S.D. $y p$ respectively given in the computer listings.

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 0
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.68	2.89	.5016	-.97	3.29	-.2412	-.95	3.30	930	.67	2.42	-.2468	-.89	2.78
24	.63	2.89	.3277	-.97	3.30					.66	2.66	-.2655	-.92	3.13
36	.67	2.91	.1496	-.94	3.32					.66	2.83	-.2718	-.93	3.23
48	.67	2.91	.1461	-.92	3.32					.67	2.87	-.2602	-.94	3.28
60	.67	2.91	.0563	-.91	3.30					.67	2.89	-.2444	-.94	3.29
72	.66	2.92	.0914	-.89	3.30					.67	2.89	-.2424	-.95	3.30

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (K-1) - 1
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
2	2.73	7.02	.0092	.74	6.31	930	3.03	.91
DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
2	2.74	7.01	.6772	.70	6.28	.5723	.0132	.3494
24	2.70	7.03	.3455	.66	6.23	.2402	.0135	.3742
36	2.69	7.08	.1205	.67	6.25	.0053	.0002	.2575
48	2.68	7.12	.0593	.73	6.29	-.0729	-.0038	.1038
60	2.72	7.15	.0637	.76	6.27	-.0468	-.0112	.0223
72	2.72	7.14	.0774	.81	6.29	.0086	-.0185	-.0200
DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
2	2.74	7.01	.6772	.70	6.28	.5723	.0132	.3494
24	2.70	7.03	.3455	.66	6.23	.2402	.0135	.3742
36	2.69	7.08	.1205	.67	6.25	.0053	.0002	.2575
48	2.68	7.12	.0593	.73	6.29	-.0729	-.0038	.1038
60	2.72	7.15	.0637	.76	6.27	-.0468	-.0112	.0223
72	2.72	7.14	.0774	.81	6.29	.0086	-.0185	-.0200
DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)
2	2.74	7.01	.6772	.70	6.28	.5723	.0132	.3494
24	2.70	7.03	.3455	.66	6.23	.2402	.0135	.3742
36	2.69	7.08	.1205	.67	6.25	.0053	.0002	.2575
48	2.68	7.12	.0593	.73	6.29	-.0729	-.0038	.1038
60	2.72	7.15	.0637	.76	6.27	-.0468	-.0112	.0223
72	2.72	7.14	.0774	.81	6.29	.0086	-.0185	-.0200

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1968) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KFT) - 2
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	7.05	7.06	.6979	1.04	6.39	.6266	1.10	6.40	930	7.20	4.67	.0248	1.30	4.69
24	7.02	7.10	.4266	1.02	6.36	.3346	1.10	6.40	930	7.11	6.02	-.0005	1.28	5.66
36	7.01	7.16	.2279	1.02	6.37	.1286	1.10	6.40	930	7.06	6.70	.0167	1.21	6.14
48	7.03	7.18	.1592	1.05	6.39	.0251	1.10	6.40	930	7.06	6.92	.0294	1.15	6.35
60	7.06	7.22	.1695	1.07	6.37	.0319	1.10	6.40	930	7.07	6.94	.0419	1.12	6.39
72	7.09	7.26	.1583	1.12	6.37	.0696	1.10	6.40	930	7.07	6.95	.0517	1.11	6.38

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
7.37	1.23

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHV ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	R (XP, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	10.75	7.37	.0948	1.30	7.21	930	10.78	7.38	.7318	1.23	7.19	.6605	10.77	7.43	.5075	10.77	7.43	.0542	1.53	5.18
24							10.74	7.52	.5421	1.21	7.16	.3887	10.74	7.52	.5421	10.74	7.52	.0235	1.49	6.33
36							10.75	7.58	.2963	1.18	7.15	.2134	10.75	7.58	.2963	10.75	7.58	.0548	1.44	6.86
48							10.77	7.63	.2769	1.16	7.17	.1147	10.77	7.63	.2769	10.77	7.63	.0788	1.37	7.12
60							10.80	7.68	.2688	1.19	7.19	.1081	10.80	7.68	.2688	10.80	7.68	.0933	1.35	7.16
72												.1182						.0968	1.34	7.15

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMH) - 4
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	R (XP, Y)	R (XP, YP)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	14.37	8.11	.7510	1.62	7.88	.6840	1.72	7.91	930	.3069	.1504	-.0718	14.53	5.13	.0757	1.93	5.68
24	14.35	8.14	.5730	1.61	7.87	.4041				.3010	.1530	-.1093	14.49	6.44	.0689	1.88	6.98
36	14.36	8.23	.4230	1.57	7.83	.2457				.2349	.1467	-.0902	14.44	7.23	.0569	1.84	7.50
48	14.38	8.31	.3596	1.57	7.81	.1627				.1674	.1384	-.0585	14.43	7.51	.1148	1.80	7.72
60	14.41	8.38	.3103	1.59	7.80	.1338				.1235	.1282	-.0225	14.42	7.68	.1259	1.78	7.79
72	14.43	8.45	.2817	1.59	7.85	.1379				.0921	.1150	.0075	14.41	7.77	.1328	1.77	7.81

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN		S.D.	R	MEAN	S.D.	N	GIVEN X	GIVEN Y	S.D. Y ^p
	X ^p	Y	X	(X,Y)	Y					
12	18.03	9.09	.7629	2.05	.6693	.2011	930	16.31	2.26	8.72
24	17.99	9.11	.6027	2.03	.4076	.2019				
36	17.98	9.15	.4784	1.97	.2528	.1953				
48	18.00	9.25	.3968	1.94	.1617	.1827				
60	18.05	9.31	.3395	1.94	.1367	.1735				
72	18.08	9.42	.2940	1.94	.1228	.1572				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228	.1572	.1158				
MEAN		S.D.	R	MEAN	S.D.	R	N	GIVEN X ^p	GIVEN Y ^p	S.D. X ^p
X ^p	Y ^p	(X,X ^p)	Y ^p	(Y,Y ^p)	(X ^p ,Y ^p)	(Y ^p ,X ^p)				
18.03	9.09	.7629	2.05	.6693	.2011	.3217	930	16.31	2.26	8.72
17.99	9.11	.6027	2.03	.4076	.2019	.3112				
17.98	9.15	.4784	1.97	.2528	.1953	.2536				
18.00	9.25	.3968	1.94	.1617	.1827	.1832				
18.05	9.31	.3395	1.94	.1367	.1735	.1608				
18.08	9.42	.2940	1.94	.1228						

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

MEAN				S.D.				R				MEAN				S.D.				R				MEAN				S.D.			
XP				Y				XP				YP				XP				YP				XP				YP			
16.31				2.26																											

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112658) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 6
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,X)
12	21.71	9.78	.7738	2.68	9.57	.6742	2.80	9.58	930	21.94	6.09	.0551	21.91	7.52	.0551
24	21.66	9.78	.6276	2.64	9.49	.4182	2.80	9.58	930	21.91	7.52	.0156	21.91	7.52	.0156
36	21.65	9.94	.4922	2.58	9.42	.2706	2.80	9.58	930	21.95	8.44	-.0135	21.95	8.44	-.0135
48	21.67	9.98	.4037	2.53	9.36	.1743	2.80	9.58	930	21.81	8.91	-.0073	21.81	8.91	-.0073
60	21.73	10.00	.3579	2.52	9.30	.1557	2.80	9.58	930	21.78	9.14	.0368	21.78	9.14	.0368
72	21.80	10.11	.3023	2.53	9.32	.1512	2.80	9.58	930	21.75	9.34	.0468	21.75	9.34	.0468

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
22.07	2.89	6.09	.1215	3.00	6.87

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/50
 ALTITUDE (M): - 7
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
HR														
12	25.28	10.92	.7978	3.28	10.63	.6768	3.42	10.67	930	25.57	6.51	.1340	3.63	7.84
24	25.24	10.93	.6230	3.20	10.54	.4011				25.53	8.19	.1582	3.63	9.49
36	25.23	10.96	.5185	3.12	10.43	.2720				25.46	9.30	.1856	3.61	9.99
48	25.28	11.12	.4383	3.06	10.37	.1877				25.40	9.80	.2066	3.57	10.25
60	25.35	11.21	.3801	3.06	10.28	.1656				25.30	10.10	.2137	3.54	10.29
72	25.44	11.30	.3174	3.07	10.25	.1350				25.31	10.36	.2366	3.50	10.42

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 8
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	28.77	11.93	.7867	3.50	11.70	.6815	3.75	11.74	930	29.06	7.33	.1371	3.98	8.37
24	28.75	11.95	.6356	3.52	11.62	.4078	3.75	11.74	930	28.99	9.18	.1771	3.97	10.42
36	28.77	12.03	.5141	3.43	11.53	.2555	3.75	11.74	930	28.91	10.22	.2032	3.94	11.03
48	28.81	12.18	.4356	3.36	11.45	.1765	3.75	11.74	930	28.85	10.74	.2297	3.90	11.29
60	28.91	12.35	.3756	3.38	11.38	.1576	3.75	11.74	930	28.80	11.07	.2386	3.87	11.34
72	28.98	12.49	.3077	3.40	11.37	.1443	3.75	11.74	930	28.76	11.57	.2578	3.84	11.44

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)
12	29.06	7.33	.1371	3.98	8.37	.1698
24	28.99	9.18	.1771	3.97	10.42	.1125
36	28.91	10.22	.2032	3.94	11.03	.0922
48	28.85	10.74	.2297	3.90	11.29	.0781
60	28.80	11.07	.2386	3.87	11.34	.0839
72	28.76	11.57	.2578	3.84	11.44	.0873

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE WEDDIE
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 9
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 32.14
 S.D. X 13.25
 R (X, Y) .3108
 MEAN Y 4.17
 S.D. Y 12.79
 N 930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	R (XP, Y)	R (YP, Y)	R (XP, X)	MEAN XF	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	32.23	13.25	.8095	4.03	12.78	.5854	4.17	12.79	.3102	.3403	.2183	32.53	7.79	.1335	4.33	9.16
24	32.24	13.29	.6699	3.97	12.66	.4110			.3076	.3110	.1609	32.45	9.84	.1792	4.33	11.40
36	32.24	13.41	.5579	3.86	12.60	.2733			.3079	.2881	.1357	32.39	11.01	.2026	4.33	12.00
48	32.31	13.56	.4668	3.77	12.49	.2102			.2993	.2573	.1132	32.31	11.74	.2302	4.31	12.23
60	32.42	13.73	.4131	3.79	12.41	.1713			.2915	.2343	.1141	32.25	12.10	.2441	4.27	12.36
72	32.54	13.88	.3575	3.78	12.39	.1476			.2917	.1977	.1149	32.20	12.41	.2624	4.24	12.48

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12869) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 10
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	35.84	14.70	.3552	4.56	13.62	930													
12	24	35.93	14.67	.8181	4.48	13.61		4.48	13.61	.3528	4.39	13.52	.7078	.3528	.2856	36.24	8.45	.1593	4.93	9.49
24	36	35.90	14.68	.6678	4.39	13.52		4.39	13.52	.3506	4.23	13.43	.4482	.3506	.2159	36.18	10.94	.2115	4.85	11.89
36	48	35.86	14.77	.5641	4.23	13.43		4.23	13.43	.3490	4.15	13.29	.3012	.3490	.1691	36.14	12.13	.2548	4.86	12.70
48	60	35.91	14.87	.4900	4.15	13.29		4.15	13.29	.3410	4.17	13.20	.2212	.3410	.1362	36.07	12.80	.2807	4.83	13.02
60	72	36.01	14.96	.4423	4.17	13.20		4.17	13.20	.3333	4.19	13.18	.1749	.3333	.1405	36.01	13.18	.2915	4.78	13.17
72		36.15	15.02	.3995	4.19	13.18		4.19	13.18	.3347			.1490	.3347	.1332	35.94	13.94	.3035	4.74	13.26

GIVEN
 X
 Y
 36.41
 4.65

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	GIVEN X (XP,YP)	R	MEAN YP	S.D. YP
12	39.46	15.56	.8308	4.63	14.67	.7340	4.86	14.67	930	.3437	.2890	39.83	8.66	.1646	.1646	4.91	9.87
24	39.46	15.59	.6798	4.53	14.60	.4923	4.82	14.60		.3441	.2242	39.75	11.41	.2073	.2073	4.99	12.53
36	39.46	15.70	.5879	4.36	14.50	.3327	4.86	14.50		.3365	.1692	39.68	12.58	.2443	.2443	5.03	13.54
48	39.46	15.79	.5223	4.27	14.35	.2383	4.86	14.35		.3320	.1295	39.61	13.25	.2765	.2765	5.00	14.00
60	39.63	15.89	.4847	4.28	14.25	.1702	4.86	14.25		.3269	.1274	39.54	13.78	.2873	.2873	4.96	14.22
72	39.77	15.92	.4196	4.30	14.21	.1318	4.86	14.21		.3335	.1184	39.47	14.12	.3015	.3015	4.92	14.35

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 12
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
41.80	41.80	14.97	.3410	5.08	14.64	930	42.39	4.71
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	41.87	14.99	.8314	4.89	14.60	.7691	42.23	8.32
24	41.89	15.07	.7009	4.78	14.52	.5257	42.15	10.68
36	41.91	15.21	.6090	4.63	14.44	.3530	42.09	11.87
48	42.03	15.40	.5465	4.54	14.40	.2433	41.99	12.53
60	42.13	15.51	.5042	4.50	14.32	.1499	41.93	12.93
72	42.26	15.53	.4595	4.51	14.29	.1045	41.86	13.30
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	4.89	14.60	.7691	42.23	8.32	.1406	4.99	9.29
24	4.78	14.52	.5257	42.15	10.68	.1810	5.13	12.23
36	4.63	14.44	.3530	42.09	11.87	.2308	5.18	13.43
48	4.54	14.40	.2433	41.99	12.53	.2614	5.18	13.95
60	4.50	14.32	.1499	41.93	12.93	.2663	5.15	14.18
72	4.51	14.29	.1045	41.86	13.30	.2796	5.11	14.29

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, XP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	42.14	13.55	.8128	4.74	12.74	.3206	4.86	12.79	930	42.42	7.88	.0968	4.79	7.86	.0968	42.63	4.59	4.79	7.86
24	42.18	13.61	.6687	4.65	12.62	.3176	.5575	.3206		42.33	10.06	.1791	4.90	10.44	.1791			4.90	10.44
36	42.19	13.75	.5638	4.55	12.55	.3166	.3790	.2819		42.28	11.17	.2266	4.95	11.64	.2266			4.95	11.64
48	42.23	13.98	.5086	4.50	12.48	.3194	.2683	.2591		42.20	11.64	.2391	4.94	12.10	.2391			4.94	12.10
60	42.43	14.15	.4788	4.51	12.41	.3215	.1946	.2297		42.12	11.87	.2532	4.91	12.34	.2532			4.91	12.34
72	42.57	14.31	.4484	4.53	12.41	.3270	.1549	.2204		42.06	12.09	.2590	4.88	12.43	.2590			4.88	12.43

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (X, Y)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, Y)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	39.89	12.30	.3140	4.27	10.86	.930	40.39	12.27	.7846	4.19	10.82	.8066	40.39	12.27	.7846	4.19	10.82
24	39.92	12.26	.6393	4.13	10.67	.6174	4.13	10.67	.3200	4.13	10.67	.3200	4.13	10.67	.3200	4.13	10.67
36	39.95	12.27	.5288	4.09	10.56	.4477	4.09	10.56	.3219	4.09	10.56	.3219	4.09	10.56	.3219	4.09	10.56
48	40.10	12.46	.4589	4.04	10.49	.3176	4.04	10.49	.3229	4.04	10.49	.3229	4.04	10.49	.3229	4.04	10.49
60	40.28	12.59	.4118	4.07	10.46	.2387	4.07	10.46	.3255	4.07	10.46	.3255	4.07	10.46	.3255	4.07	10.46
72	40.39	12.75	.3612	4.10	10.44	.1978	4.10	10.44	.3296	4.10	10.44	.3296	4.10	10.44	.3296	4.10	10.44

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	39.92	12.27	.7846	4.19	10.82	.8066	40.39	12.27	.7846	4.19	10.82
24	39.95	12.26	.6393	4.13	10.67	.6174	40.39	12.26	.6393	4.13	10.67
36	40.00	12.27	.5288	4.09	10.56	.4477	40.39	12.27	.5288	4.09	10.56
48	40.10	12.46	.4589	4.04	10.49	.3176	40.39	12.46	.4589	4.04	10.49
60	40.28	12.59	.4118	4.07	10.46	.2387	40.39	12.59	.4118	4.07	10.46
72	40.39	12.75	.3612	4.10	10.44	.1978	40.39	12.75	.3612	4.10	10.44

QUADRVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE (101) - 15
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	35.89	10.67	.2985	4.04	9.81	930	36.29	3.79
DT HR	QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	35.75	10.64	.7947	4.00	9.76	.2981	36.09	7.00
24	35.79	10.64	.8052	3.94	9.66	.3011	35.99	8.49
36	35.83	10.68	.8094	3.88	9.57	.3002	35.93	9.18
48	35.89	10.77	.8206	3.83	9.48	.2929	35.85	9.68
60	35.89	10.86	.8331	3.82	9.48	.2925	35.80	9.93
72	36.11	10.96	.8425	3.82	9.47	.2946	35.75	10.01
DT HR	QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	35.75	10.64	.7947	4.00	9.76	.2981	36.09	7.00
24	35.79	10.64	.8052	3.94	9.66	.3011	35.99	8.49
36	35.83	10.68	.8094	3.88	9.57	.3002	35.93	9.18
48	35.89	10.77	.8206	3.83	9.48	.2929	35.85	9.68
60	35.89	10.86	.8331	3.82	9.48	.2925	35.80	9.93
72	36.11	10.96	.8425	3.82	9.47	.2946	35.75	10.01
DT HR	QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	35.75	10.64	.7947	4.00	9.76	.2981	36.09	7.00
24	35.79	10.64	.8052	3.94	9.66	.3011	35.99	8.49
36	35.83	10.68	.8094	3.88	9.57	.3002	35.93	9.18
48	35.89	10.77	.8206	3.83	9.48	.2929	35.85	9.68
60	35.89	10.86	.8331	3.82	9.48	.2925	35.80	9.93
72	36.11	10.96	.8425	3.82	9.47	.2946	35.75	10.01

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 16
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN		S.D. X	R (X, Y)	MEAN		S.D. Y	N	MEAN		S.D. XP	R (XP, Y)	MEAN		S.D. YP	R (YP, X)
	X	Y			X	Y			X	Y			X	Y		
12	30.67	30.67	9.25	.2726	3.56	8.47	930		31.11	3.44						
24																
36																
48																
60																
72																

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN		S.D. XP	R (XP, YP)	MEAN		S.D. YP	R (YP, XP)
	XP	YP			XP	YP		
12	30.70	30.70	9.22	8.43	3.51	8.43	9.22	8.43
24	30.73	30.73	9.19	8.34	3.44	8.34	9.19	8.34
36	30.77	30.77	9.22	8.25	3.41	8.25	9.22	8.25
48	30.84	30.84	9.30	8.20	3.38	8.20	9.30	8.20
60	30.96	30.96	9.36	8.19	3.37	8.19	9.36	8.19
72	31.07	31.07	9.41	8.18	3.33	8.18	9.41	8.18

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE (KM) - 17
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	24.73	8.44	.2632	2.57	7.34	930	25.08	6.10	.1303	25.08	4.84	.1303	2.67	4.84
24							24.99	7.00	.1495	24.99	5.74	.1495	2.71	5.74
36							24.91	7.50	.1826	24.91	6.46	.1826	2.69	6.46
48							24.85	7.88	.1916	24.85	6.84	.1916	2.67	6.84
60							24.80	7.91	.2035	24.80	7.04	.2035	2.63	7.04
72							24.75	8.10	.2203	24.75	7.14	.2203	2.60	7.14

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/50 - 12/70
 ALTITUDE (KM) - 1.10
 ALPHA ANGLE - 1.10

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + OT)
 YP = V(AT T + OT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

OT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	18.32	7.77	.6405	1.79	5.80	.2965	1.82	5.82	930	18.58	5.38	.2146	1.93	4.03
24	18.35	7.78	.5526	1.76	5.75					18.53	6.46	.2181	1.95	4.67
36	18.44	7.79	.4284	1.76	5.67					18.44	7.00	.2355	1.92	5.18
48	18.50	7.81	.3440	1.74	5.63					18.39	7.29	.2365	1.90	5.45
60	18.62	7.85	.2628	1.77	5.62					18.34	7.50	.2526	1.86	5.61
72	18.73	7.93	.2262	1.75	5.64					18.31	7.58	.2629	1.83	5.69

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

OT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	18.32	7.77	.6405	1.79	5.80	.2965	1.82	5.82	930	18.58	5.38	.2146	1.93	4.03
24	18.35	7.78	.5526	1.76	5.75					18.53	6.46	.2181	1.95	4.67
36	18.44	7.79	.4284	1.76	5.67					18.44	7.00	.2355	1.92	5.18
48	18.50	7.81	.3440	1.74	5.63					18.39	7.29	.2365	1.90	5.45
60	18.62	7.85	.2628	1.77	5.62					18.34	7.50	.2526	1.86	5.61
72	18.73	7.93	.2262	1.75	5.64					18.31	7.58	.2629	1.83	5.69

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 1-70
 ALTITUDE (KM) - 19
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	12.73	7.35	.2669	1.07	4.55	930	12.87	5.96	.2631	1.21	3.39	.0771	12.81	6.45	.2762	1.19	3.79
24							12.79	7.32	.4645	1.06	4.53	.0084	12.76	6.69	.2416	1.16	4.13
36							12.84	7.20	.3922	1.04	4.50	-.0310	12.74	6.87	.2291	1.12	4.34
48							12.89	7.28	.3022	1.05	4.47	-.0094	12.72	7.05	.2276	1.10	4.41
60							12.96	7.31	.2692	1.04	4.47	-.0111	12.71	7.15	.2334	1.07	4.45
72							13.03	7.36	.2211	1.02	4.48	.0005					

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	R (XP, Y)	R (XP, YP)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	8.73	6.81	.6155	.55	3.84	.5382	.55	3.84	930	.2922	.2642	.1258	8.69	5.36	.2416	.61	3.21
24	8.78	6.77	.5032	.56	3.81	.5057	.56	3.81		.2821	.2460	.0883	8.68	5.88	.2650	.59	3.29
36	8.82	6.75	.4323	.56	3.78	.3949	.56	3.78		.2771	.2532	.0457	8.66	6.13	.2507	.57	3.54
48	8.88	6.71	.3665	.54	3.78	.2869	.54	3.78		.2721	.2379	.0405	8.65	6.33	.2524	.56	3.63
60	8.92	6.71	.3365	.53	3.78	.1639	.53	3.78		.2669	.1965	.0288	8.64	6.41	.2571	.54	3.74
72	8.95	6.73	.3030	.53	3.79	.1254	.53	3.79		.2630	.1799	.0518	8.63	6.50	.2590	.54	3.77

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128881 - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 21
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Yp	S.D. Yp
12	6.45	7.06	.2309	.23	3.61	930								
24														
36														
48														
60														
72														

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFT) - 22
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	R (XP,X)	R (YP,X)	R (XP,Y)	R (YP,Y)	R (XP,YP)	R (YP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	5.32	7.75	.2506	.29	3.72	830	.4061	3.71	.2493	.32	3.71	.4402	.4061	3.71	.1436	.1583	.2245	.1940	.2483	.2483	5.07	5.79	.1622	.34	3.36
24	5.33	7.76	.2506	.29	3.72	830	.4402	3.71	.2483	.31	3.71	.4402	.4402	3.71	.1583	.1583	.1940	.1940	.2483	.2483	5.12	5.79	.1622	.34	3.33
36	5.36	7.75	.2506	.29	3.72	830	.2050	3.72	.2439	.32	3.72	.2050	.2050	3.72	.1732	.1732	.1650	.1650	.2439	.2439	5.13	6.32	.1887	.30	3.61
48	5.37	7.78	.2506	.29	3.73	830	.2694	3.73	.2429	.31	3.73	.2694	.2694	3.73	.0967	.0967	.1527	.1527	.2429	.2429	5.09	6.47	.2190	.32	3.56
60	5.41	7.78	.2506	.29	3.76	830	.1230	3.76	.2389	.31	3.76	.1230	.1230	3.76	.0746	.0746	.1293	.1293	.2389	.2389	5.10	6.85	.2222	.29	3.67
72	5.43	7.78	.2506	.29	3.77	830	.1704	3.77	.2386	.30	3.77	.1704	.1704	3.77	.0445	.0445	.1154	.1154	.2386	.2386	5.10	7.07	.2362	.31	3.65

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 23
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, Y)	MEAN Y	S.D. Y	R (Y, XP)	R (YP, X)
12	4.88	8.28	.7601	.57	3.94	.2469	.54	3.95	930	4.51	5.38	.1411	.85	3.46	.1938	.4717	.2393	.2246	.2246
24	4.85	8.27	.7067	.59	3.92					4.55	5.67	.1760	.84	3.49	.1769	.4602	.2367	.1938	.1938
36	4.88	8.28	.6726	.63	3.91					4.52	6.14	.1938	.58	3.71	.1774	.3273	.2338	.1339	.1339
48	4.87	8.26	.6358	.63	3.90					4.55	6.41	.2183	.58	3.75	.1387	.2934	.2201	.1332	.1332
60	4.94	8.26	.5634	.65	3.90					4.55	6.86	.2429	.54	3.91	.0876	.1194	.2173	.1101	.1101
72	4.99	8.26	.5144	.65	3.90					4.55	7.12	.2534	.56	3.90	.0678	.1407	.2114	.0666	.0666

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP, YP)	MEAN YP	S.D. YP
12	5.12	9.12	.8095	.64	3.87	.2078	.84	3.88	930	4.51	5.35	.1941	.77	3.46	4.35	1.00	.1941	.77	3.46
24	5.06	9.11	.7570	.67	3.88					4.53	5.96	.2010	.77	3.47			.2010	.77	3.47
36	5.08	9.10	.6982	.71	3.93					4.64	6.53	.2033	.70	3.72			.2033	.70	3.72
48	5.07	9.07	.6551	.74	3.96					4.67	6.88	.2372	.67	3.71			.2372	.67	3.71
60	5.12	9.06	.5991	.75	3.98					4.65	7.27	.2496	.67	3.82			.2496	.67	3.82
72	5.14	9.04	.5508	.76	3.98					4.70	7.55	.2295	.67	3.81			.2295	.67	3.81

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	R (XP, Y)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	6.20	9.66	.8262	.81	4.16	.1650	.81	4.17	930	.1256	.1397	.1674	5.58	5.43	.1191	.98	3.55
24	6.18	9.65	.8071	.82	4.16		.4876			.1297	.1087	.1687	5.62	5.69	.1580	.98	3.64
36	6.15	9.66	.7329	.81	4.16		.3564			.1168	.1107	.1695	5.70	6.56	.1378	.92	3.89
48	6.15	9.64	.7019	.78	4.15		.3397			.1021	.0513	.1810	5.69	6.86	.2069	.95	3.92
60	6.17	9.63	.6316	.78	4.16		.2039			.0877	.0210	.1839	5.73	7.47	.2092	.90	4.08
72	6.18	9.58	.5932	.76	4.16		.1979			.0570	-.0186	.1819	5.72	7.74	.2387	.92	4.08

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 26
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + OT)
 YP = V(AT T + OT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

OT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	7.33	11.19	.8496	1.04	4.81	.1782	1.04	4.60	930	7.05	5.89	.1748	1.24	3.91
24	7.46	11.23	.7876	1.00	4.60					7.15	6.88	.2244	1.26	3.98
36	7.42	11.78	.7249	1.01	4.63					7.22	7.68	.2194	1.18	4.34
48	7.40	11.13	.6981	1.02	4.82					7.22	7.99	.2496	1.20	4.28
60	7.40	11.12	.6437	1.02	4.63					7.24	8.34	.2665	1.14	4.49
72	7.40	11.09	.5930	1.01	4.63					7.29	8.99	.2680	1.16	4.45

GIVEN X
 GIVEN Y
 6.87 1.43

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 27
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	R (X, YP)	MEAN Y	S.D. Y	R (Y, YP)	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	8.20	12.53	.1350	1.56	5.28	930	7.40	2.08																	
24																									
36																									
48																									
60																									
72																									

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	8.14	12.54	.8735	1.55	5.29	.5919	5.29	.1282	7.56	6.10	.1869	1.86	4.25
24	8.06	12.60	.8142	1.48	5.18	.5117	5.18	.1239	7.69	7.27	.2139	1.86	4.53
36	8.06	12.53	.7628	1.48	5.18	.3843	5.18	.1186	7.72	8.10	.2215	1.81	4.87
48	8.01	12.52	.7175	1.50	5.17	.3559	5.17	.1213	7.73	8.72	.2699	1.79	4.91
60	7.97	12.54	.6654	1.47	5.18	.2412	5.18	.1286	7.77	9.35	.2907	1.75	5.08
72	8.01	12.51	.6205	1.45	5.23	.1982	5.23	.1252	7.79	9.82	.2790	1.73	5.12

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12858) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
1	1/56 - 12/70	0	90.0	.66	2.90	-.2412	-.95	3.30	930
1	1/56 - 12/70	1	90.0	2.73	7.02	.0092	1.74	6.31	930
1	1/56 - 12/70	2	90.0	7.03	7.06	.0462	1.10	6.40	930
1	1/56 - 12/70	3	90.0	10.75	7.37	.0349	1.30	7.21	930
1	1/56 - 12/70	4	90.0	14.35	8.10	.1405	1.72	7.91	930
1	1/56 - 12/70	5	90.0	18.02	9.08	.2037	2.15	8.72	930
1	1/56 - 12/70	6	90.0	21.68	9.83	.2295	2.80	9.59	930
1	1/56 - 12/70	7	90.0	25.23	10.93	.2793	3.42	10.67	930
1	1/56 - 12/70	8	90.0	28.68	11.95	.3017	3.75	11.74	930
1	1/56 - 12/70	9	90.0	32.14	13.29	.3108	4.17	12.79	930
1	1/56 - 12/70	10	90.0	35.64	14.70	.3552	4.66	13.62	930
1	1/56 - 12/70	11	90.0	39.39	15.56	.3474	4.96	14.67	930
1	1/56 - 12/70	12	90.0	41.80	14.97	.3410	5.08	14.64	930
1	1/56 - 12/70	13	90.0	42.03	13.53	.3206	4.86	12.79	930
1	1/56 - 12/70	14	90.0	39.89	12.30	.3140	4.27	10.86	930
1	1/56 - 12/70	15	90.0	35.69	10.67	.2585	4.04	9.81	930
1	1/56 - 12/70	16	90.0	30.67	9.25	.2726	3.56	8.47	930
1	1/56 - 12/70	17	90.0	24.73	8.44	.2632	2.57	7.34	930
1	1/56 - 12/70	18	90.0	18.31	7.79	.2965	1.82	5.82	930
1	1/56 - 12/70	19	90.0	12.73	7.35	.2669	1.07	4.55	930
1	1/56 - 12/70	20	90.0	8.73	6.82	.2940	.55	3.84	930
1	1/56 - 12/70	21	90.0	6.45	7.06	.2309	.23	3.61	930
1	1/56 - 12/70	22	90.0	5.32	7.75	.2506	.29	3.72	930
1	1/56 - 12/70	23	90.0	4.93	8.30	.2469	.54	3.95	930
1	1/56 - 12/70	24	90.0	5.18	9.13	.2076	.64	3.88	930
1	1/56 - 12/70	25	90.0	6.23	9.64	.1650	.81	4.17	930
1	1/56 - 12/70	26	90.0	7.60	11.16	.1782	1.04	4.60	930
1	1/56 - 12/70	27	90.0	8.20	12.53	.1350	1.56	5.28	930

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 0
ALPHA ANGLE - 90.0

$$\begin{array}{l} X = U(AT) \\ Y = V(AT) \end{array} \quad \begin{array}{l} X^P = U(AT) \\ Y^P = V(AT) \end{array}$$

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	.55	3.25	-.2792	-.30	3.43	848	.45	-.09
14	MEAN XP	R (X, XP)	MEAN YP	R (Y, YP)	R (XP, YP)	R (YP, X)	S.D. XP	R (XP, YP)
12	.54	.4446	-.30	.4909	-.2807	-.4020	.46	-.2327
24	.55	.2933	-.32	.1802	-.2077	-.3418	.50	-.2863
36	.55	.1126	-.34	-.0149	.0927	-.1897	.47	-.2949
48	.52	3.28	-.32	-.0354	-.2823	-.1057	.52	-.2844
60	.51	3.27	-.34	-.0660	-.2716	-.0755	.53	-.2861
72	.52	.0688	-.31	-.0246	-.2734	-.0581	.53	-.2312

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN X	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	3.84	7.27	.5614	1.75	6.61	-.0335	1.72	6.61	848	3.81	3.65	2.35	3.46	4.79	-.1025	2.00	5.02
24	3.89	7.26	.3299	1.73	6.63								3.48	6.25	-.0610	1.79	6.14
36	3.86	7.19	.1132	1.73	6.63								3.60	6.88	-.0423	1.71	6.54
48	3.86	7.18	.0709	1.74	6.64								3.66	7.05	-.0309	1.73	6.61
60	3.88	7.15	.0281	1.76	6.6								3.71	7.13	-.0317	1.73	6.61
72	3.91	7.12	-.0190	1.77	6.61								3.75	7.17	-.0365	1.71	6.61

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN X	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	3.84	7.27	.5614	1.75	6.61	-.0335	1.72	6.61	848	3.81	3.65	2.35	3.46	4.79	-.1025	2.00	5.02
24	3.89	7.26	.3299	1.73	6.63								3.48	6.25	-.0610	1.79	6.14
36	3.86	7.19	.1132	1.73	6.63								3.60	6.88	-.0423	1.71	6.54
48	3.86	7.18	.0709	1.74	6.64								3.66	7.05	-.0309	1.73	6.61
60	3.88	7.15	.0281	1.76	6.6								3.71	7.13	-.0317	1.73	6.61
72	3.91	7.12	-.0190	1.77	6.61								3.75	7.17	-.0365	1.71	6.61

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 30.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	S.D. YP	MEAN YP	S.D. YP
12	8.15	7.73	-.0181	1.51	6.70	848	7.85	5.05	-.0681	1.76	5.08	
24							7.83	6.41	-.0483	1.61	6.15	
36							7.90	7.09	-.0310	1.54	6.57	
48							7.98	7.37	-.017	1.53	6.67	
60							7.88	7.49	-.0176	1.52	6.68	
72							8.02	7.61	-.0230	1.49	6.70	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 50.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	12.13	8.30	.7379	1.84	7.36	.6284	1.75	7.36	848	11.81	2.40	11.65	5.08	.0725	2.05	5.94
24	12.19	8.28	.5724	1.82	7.37	.3484						11.64	6.42	.0250	1.89	6.75
36	12.25	8.17	.4101	1.79	7.41	.2047						11.67	7.14	.0178	1.82	7.14
48	12.29	8.13	.3465	1.79	7.40	.1426						11.72	7.48	.0169	1.80	7.26
60	12.31	8.08	.2971	1.79	7.35	.0972						11.75	7.68	.0087	1.78	7.30
72	12.31	8.06	.2287	1.77	7.31	.0295						11.80	7.89	.0040	1.75	7.35

QUADF VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XF, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFI) - 4
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (YP,X)	R (XP,Y)	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	15.46	9.18				-.0035	2.26	8.05	848								
12	15.56	9.20	.7731	2.37	8.06		.6254	-.0005		-.2435	.1689	-.0005	14.81	5.38	.0403	2.53	6.13
24	15.64	9.21	.5965	2.39	8.12		.3859	-.0122		-.3026	.1576	-.0122	14.85	6.85	.0252	2.38	7.31
36	15.68	9.11	.4836	2.38	8.18		.2457	-.0119		-.2566	.1235	-.0119	14.93	7.70	-.0015	2.32	7.74
48	15.73	9.02	.4223	2.35	8.20		.1755	-.0073		-.2256	.1004	-.0073	14.97	8.07	-.0078	2.29	7.88
60	15.76	8.95	.3619	2.31	8.19		.1072	.0026		-.2073	.1002	.0026	15.00	8.34	-.0194	2.25	7.96
72	15.75	8.89	.2887	2.29	8.10		.0725	.0126		-.1668	.0574	.0126	15.11	8.71	-.0071	2.27	8.01

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1955 - 12/70
 ALTITUDE (FT) - 5
 ALPHA ANGLE - 90.0

X = U(1, T)
 Y = V(1, T)

XP = U(1, T + DT)
 YP = V(1, T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

D- HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	19.12	10.18	.0155	2.64	8.97	848	18.45	3.43
D- HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	19.26	10.20	.8110	2.73	8.98	.6308	18.30	9.59
24	19.50	10.23	.6445	2.77	9.07	.3914	18.30	7.35
36	19.46	10.17	.5255	2.80	9.14	.2569	18.43	8.37
48	19.53	10.07	.4533	2.80	9.14	.2042	18.48	8.85
60	19.55	9.98	.3818	2.75	9.14	.1468	18.54	9.20
72	19.55	9.88	.3047	2.75	9.05	.1336	18.64	9.54
D- HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (Y, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	19.26	10.20	.8110	2.73	8.98	.6308	18.30	9.59
24	19.50	10.23	.6445	2.77	9.07	.3914	18.30	7.35
36	19.46	10.17	.5255	2.80	9.14	.2569	18.43	8.37
48	19.53	10.07	.4533	2.80	9.14	.2042	18.48	8.85
60	19.55	9.98	.3818	2.75	9.14	.1468	18.54	9.20
72	19.55	9.88	.3047	2.75	9.05	.1336	18.64	9.54

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12828) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 6
 ALPHA ANGLE - 90.0
 $X = U(A, T)$
 $Y = V(A, T)$
 $XP = U(A, T + DT)$
 $YP = V(A, T + DT)$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN
 X
 23.14
 S.D.
 X
 11.15
 P
 (X, Y)
 .0338
 MEAN
 Y
 3.18
 S.D.
 Y
 9.51
 N
 848

DT
 12
 24
 36
 48
 60
 72
 MEAN
 XP
 23.31
 23.48
 23.53
 23.62
 23.67
 23.69
 S.D.
 XP
 11.23
 11.26
 11.18
 11.04
 10.99
 10.89
 P
 (X, XP)
 .8136
 .6497
 .5415
 .4630
 .3950
 .3303
 MEAN
 YP
 3.31
 3.32
 3.35
 3.36
 3.32
 3.27
 S.D.
 YP
 9.52
 9.60
 9.75
 9.77
 9.78
 9.74
 P
 (Y, YP)
 .6428
 .4022
 .2845
 .2201
 .1685
 .1516
 R
 (XP, YP)
 .0951
 .0915
 .0904
 .0902
 .0968
 .1056
 R
 (XP, Y)
 .2145
 .2022
 .1773
 .1535
 .1300
 .1082
 R
 (YP, X)
 -.0849
 -.1437
 -.1327
 -.1249
 -.1272
 -.1275
 MEAN
 XP
 22.20
 22.22
 22.33
 22.38
 22.45
 22.51
 S.D.
 XP
 8.22
 8.16
 9.15
 9.67
 10.07
 10.37
 R
 (XP, YP)
 .0503
 .0822
 .0604
 .0577
 .0774
 .0686
 MEAN
 YP
 3.34
 3.32
 3.22
 3.18
 3.17
 3.19
 S.D.
 YP
 7.14
 8.57
 9.01
 9.19
 9.32
 9.36

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN
 X
 22.34
 GIVEN
 Y
 4.08

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112859 - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (M) - 7
 ALPHA ANGLE - 90.0

X = U(A* T)
 Y = V(A* T)

XP = U(A* T + DT)
 YP = V(A* T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN Y	MEAN YP	S.D. X	S.D. XP	P (X, Y)	MEAN Y	MEAN YP	S.D. Y	S.D. YP	P (X, Y)	N
12	25.89	27.08	12.53	12.53	.1524	3.59	3.71	10.33	10.33	.1524	848
24		27.27									
36		27.38									
48		27.47									
60		27.50									
72		27.53									

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
25.96	4.49	25.83	6.92	.0846	3.93	7.81
		25.94	9.04	.1067	3.56	9.39
		25.93	10.13	.1182	3.56	9.88
		26.00	10.78	.1190	3.52	10.07
		26.08	11.22	.1190	3.48	10.16
		26.17	11.60	.1356	3.51	10.19

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF Y, XP, YP

STATION (12958) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/79
 ALTITUDE (FT) - 8
 ALPHA ANGLE - 30.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN Y	S.D. Y	R (X, Y)	MEAN Y	S.D. Y	N
	30.63	14.01	.1902	3.79	11.35	848
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)
DT	31.80	14.04	.8395	3.90	11.34	.6715
HP	31.01	14.05	.7027	3.93	11.40	.4125
12	31.11	13.92	.5893	3.96	11.56	.2526
36	31.19	13.72	.5043	3.99	11.63	.1667
48	31.21	13.52	.4338	3.96	11.65	.1224
60	31.25	13.41	.3668	3.92	11.64	.1024
72						

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	29.58	4.67
	S.D. XP	S.D. YP
	7.46	8.27
	9.85	10.14
	11.21	10.82
	12.01	11.06
	12.52	11.14
	12.95	11.19
	MEAN XP	MEAN YP
	29.48	4.15
	29.48	3.86
	29.59	3.73
	29.68	3.67
	29.76	3.65
	29.86	3.63
	R (XP, YP)	R (XP, YP)
	.1122	.0936
	.0936	.1206
	.1206	.1369
	.1369	.1475
	.1475	.1563

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: 1129531 - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 9
 ALPHA ANGLE - 90.0

Y = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	34.74	15.75	.8490	4.23	12.35	.2343	4.11	12.35	648	33.44	4.88	8.24	.1455	4.43	8.85
24	34.95	15.71	.7298	4.22	12.45							10.67	.1432	4.17	11.01
36	35.07	15.55	.6317	4.28	12.63							12.14	.1559	4.03	11.71
48	35.18	15.38	.5451	4.31	12.69							13.13	.1713	3.96	11.98
60	35.25	15.18	.4741	4.29	12.71							13.79	.1872	3.96	12.09
72	35.30	15.04	.4114	4.22	12.71							14.29	.1936	3.94	12.14

STATION	12988.	-	CAPE WENDEY	X = U(AT T)
MONTH OF RECORD		-	FEBRUARY	Y = V(AT T)
PERIOD OF RECORD		-	1/55 - 12/70	XP = U(AT T + CT)
ALTITUDE (M)		-	10	YP = V(AT T + CT)
ALPHA ANGLE		-	90.0	

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STATION (12858)	-	CAPE KENNEDY
MONTH OF RECORD	-	FEBRUARY
PERIOD OF RECORD	-	1/56 - 12/70
ALTITUDE (KM)	-	11
ALPHA ANGLE	-	93.0

$$\begin{aligned} X &= U(AT) \\ Y &= V(AT) \\ XP &= U(AT) + DT \\ YP &= V(AT) + DT \end{aligned}$$

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X _P	S.D. X _P	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. Y _P
12	42.18	17.65	4.26	42.91	14.98	848	40.48	4.70	10.18
24	42.34	17.53	4.25	42.91	14.98	848	40.48	4.70	10.18
36	42.49	17.34	4.41	42.91	14.98	848	40.48	4.70	10.18
48	42.63	17.15	4.46	42.91	14.98	848	40.48	4.70	10.18
60	42.78	17.04	4.45	42.91	14.98	848	40.48	4.70	10.18
72	42.89	16.99	4.37	42.91	14.98	848	40.48	4.70	10.18

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 12
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	24	44.66	17.25	.2765	4.30	14.65	.2765	4.30	14.65	848	43.15	9.18	.1059	4.31	9.43	.1059	4.31	9.43
36	48	44.77	17.03	.8461	4.46	14.61	.8461	4.46	14.61		43.32	9.18	.1059	4.31	9.43	.1059	4.31	9.43
60	72	44.88	17.03	.7324	4.53	14.64	.7324	4.53	14.64		43.40	9.18	.1059	4.31	9.43	.1059	4.31	9.43
		45.01	16.84	.6452	4.57	14.68	.6452	4.57	14.68		43.43	9.18	.1059	4.31	9.43	.1059	4.31	9.43
		45.06	16.59	.5944	4.53	14.65	.5944	4.53	14.65		43.48	9.18	.1059	4.31	9.43	.1059	4.31	9.43
		45.13	16.43	.5369	4.48	14.65	.5369	4.48	14.65		43.51	9.18	.1059	4.31	9.43	.1059	4.31	9.43
		45.20	16.37	.4828	4.48	14.65	.4828	4.48	14.65		43.59	9.18	.1059	4.31	9.43	.1059	4.31	9.43

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
43.15	4.82

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12889) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (XP,X)	R (YP,Y)
12	44.56	15.84	.8145	4.34	12.81	.7562	4.25	12.82	848	43.27	9.21	.3462	43.48	9.21	.1919	4.46	8.36	.3050	.3108
24	44.62	15.76	.7161	4.41	12.84	.5391							43.54	11.10	.2413	4.28	10.72	.2524	.2772
36	44.77	15.62	.6282	4.43	12.87	.3651							43.54	12.37	.2778	4.17	11.82	.1894	.2406
48	44.82	15.32	.5757	4.47	12.89	.2707							43.54	12.97	.3070	4.13	12.23	.1324	.2058
60	44.80	15.18	.5267	4.39	12.89	.2396							43.61	13.48	.3087	4.13	12.33	.1077	.2004
72	44.77	15.02	.4706	4.33	12.87	.2286							43.71	14.01	.3102	4.15	12.37	.0974	.1943

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12859) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.1

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, P)	MEAN YP	S.D. YP
12	41.43	13.82	.3179	3.82	11.13	848								
24														
36														
48														
60														
72														

[illegible]

Case	Age	Sex	Site	Time	Pathologic	Survival
1	60	M	Rectum	1978	Adenocarcinoma	10 years
2	65	F	Rectum	1980	Adenocarcinoma	12 years
3	70	M	Rectum	1982	Adenocarcinoma	15 years
4	75	F	Rectum	1985	Adenocarcinoma	18 years
5	80	M	Rectum	1988	Adenocarcinoma	20 years
6	85	F	Rectum	1990	Adenocarcinoma	22 years
7	90	M	Rectum	1992	Adenocarcinoma	25 years
8	95	F	Rectum	1995	Adenocarcinoma	28 years
9	100	M	Rectum	1998	Adenocarcinoma	30 years
10	105	F	Rectum	2000	Adenocarcinoma	32 years

COGNITIVE B: ADAPTIVE NORMAL STATISTICS
FOR NP AND P

[illegible]

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 118853 - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 15
 ALPHA ANGLE - 90.0

X = U/IAT T
 Y = V/IAT T
 XP = U/IAT T + DT
 YP = V/IAT T + DT

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT MP	QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	31.60	10.60	.1968	2.82	8.17	848	30.86	3.13
DT MP	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	R (XP, YP)	S.D. YP
	31.60	10.65	.7623	2.87	8.15	.7415	.0829	5.41
	31.65	10.67	.5342	2.83	8.21	.5478	.0228	6.73
	31.72	10.66	.5319	2.71	8.27	.3744	.0064	7.43
	31.74	10.54	.4718	2.43	8.30	.2831	.0034	7.78
	31.75	10.45	.4400	2.33	8.30	.2211	-.0065	7.94
	31.71	10.45	.5858	2.58	8.33	.1898	-.0232	7.90

DIAPHRAGMATIC AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1988 - CASE KENEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1988 - 1990
 ALTITUDE - 1000
 ALPHAS - 1000

X = 1000
 Y = 1000

XP = 1000
 YP = 1000

DIAPHRAGMATIC NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ID	XP	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	P (XP,Y)	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
1	20.58	9.47	13.12	2.08	6.34	848						
2	20.59	9.49	13.13	2.09	6.35	848						
3	20.60	9.50	13.14	2.10	6.36	848						
4	20.61	9.51	13.15	2.11	6.37	848						
5	20.62	9.52	13.16	2.12	6.38	848						
6	20.63	9.53	13.17	2.13	6.39	848						
7	20.64	9.54	13.18	2.14	6.40	848						
8	20.65	9.55	13.19	2.15	6.41	848						
9	20.66	9.56	13.20	2.16	6.42	848						
10	20.67	9.57	13.21	2.17	6.43	848						
11	20.68	9.58	13.22	2.18	6.44	848						
12	20.69	9.59	13.23	2.19	6.45	848						
13	20.70	9.60	13.24	2.20	6.46	848						
14	20.71	9.61	13.25	2.21	6.47	848						
15	20.72	9.62	13.26	2.22	6.48	848						
16	20.73	9.63	13.27	2.23	6.49	848						
17	20.74	9.64	13.28	2.24	6.50	848						
18	20.75	9.65	13.29	2.25	6.51	848						
19	20.76	9.66	13.30	2.26	6.52	848						
20	20.77	9.67	13.31	2.27	6.53	848						
21	20.78	9.68	13.32	2.28	6.54	848						
22	20.79	9.69	13.33	2.29	6.55	848						
23	20.80	9.70	13.34	2.30	6.56	848						
24	20.81	9.71	13.35	2.31	6.57	848						
25	20.82	9.72	13.36	2.32	6.58	848						
26	20.83	9.73	13.37	2.33	6.59	848						
27	20.84	9.74	13.38	2.34	6.60	848						
28	20.85	9.75	13.39	2.35	6.61	848						
29	20.86	9.76	13.40	2.36	6.62	848						
30	20.87	9.77	13.41	2.37	6.63	848						
31	20.88	9.78	13.42	2.38	6.64	848						
32	20.89	9.79	13.43	2.39	6.65	848						
33	20.90	9.80	13.44	2.40	6.66	848						
34	20.91	9.81	13.45	2.41	6.67	848						
35	20.92	9.82	13.46	2.42	6.68	848						
36	20.93	9.83	13.47	2.43	6.69	848						
37	20.94	9.84	13.48	2.44	6.70	848						
38	20.95	9.85	13.49	2.45	6.71	848						
39	20.96	9.86	13.50	2.46	6.72	848						
40	20.97	9.87	13.51	2.47	6.73	848						
41	20.98	9.88	13.52	2.48	6.74	848						
42	20.99	9.89	13.53	2.49	6.75	848						
43	21.00	9.90	13.54	2.50	6.76	848						
44	21.01	9.91	13.55	2.51	6.77	848						
45	21.02	9.92	13.56	2.52	6.78	848						
46	21.03	9.93	13.57	2.53	6.79	848						
47	21.04	9.94	13.58	2.54	6.80	848						
48	21.05	9.95	13.59	2.55	6.81	848						
49	21.06	9.96	13.60	2.56	6.82	848						
50	21.07	9.97	13.61	2.57	6.83	848						
51	21.08	9.98	13.62	2.58	6.84	848						
52	21.09	9.99	13.63	2.59	6.85	848						
53	21.10	10.00	13.64	2.60	6.86	848						
54	21.11	10.01	13.65	2.61	6.87	848						
55	21.12	10.02	13.66	2.62	6.88	848						
56	21.13	10.03	13.67	2.63	6.89	848						
57	21.14	10.04	13.68	2.64	6.90	848						
58	21.15	10.05	13.69	2.65	6.91	848						
59	21.16	10.06	13.70	2.66	6.92	848						
60	21.17	10.07	13.71	2.67	6.93	848						
61	21.18	10.08	13.72	2.68	6.94	848						
62	21.19	10.09	13.73	2.69	6.95	848						
63	21.20	10.10	13.74	2.70	6.96	848						
64	21.21	10.11	13.75	2.71	6.97	848						
65	21.22	10.12	13.76	2.72	6.98	848						
66	21.23	10.13	13.77	2.73	6.99	848						
67	21.24	10.14	13.78	2.74	7.00	848						
68	21.25	10.15	13.79	2.75	7.01	848						
69	21.26	10.16	13.80	2.76	7.02	848						
70	21.27	10.17	13.81	2.77	7.03	848						
71	21.28	10.18	13.82	2.78	7.04	848						
72	21.29	10.19	13.83	2.79	7.05	848						
73	21.30	10.20	13.84	2.80	7.06	848						
74	21.31	10.21	13.85	2.81	7.07	848						
75	21.32	10.22	13.86	2.82	7.08	848						
76	21.33	10.23	13.87	2.83	7.09	848						
77	21.34	10.24	13.88	2.84	7.10	848						
78	21.35	10.25	13.89	2.85	7.11	848						
79	21.36	10.26	13.90	2.86	7.12	848						
80	21.37	10.27	13.91	2.87	7.13	848						
81	21.38	10.28	13.92	2.88	7.14	848						
82	21.39	10.29	13.93	2.89	7.15	848						
83	21.40	10.30	13.94	2.90	7.16	848						
84	21.41	10.31	13.95	2.91	7.17	848						
85	21.42	10.32	13.96	2.92	7.18	848						
86	21.43	10.33	13.97	2.93	7.19	848						
87	21.44	10.34	13.98	2.94	7.20	848						
88	21.45	10.35	13.99	2.95	7.21	848						
89	21.46	10.36	14.00	2.96	7.22	848						
90	21.47	10.37	14.01	2.97	7.23	848						
91	21.48	10.38	14.02	2.98	7.24	848						
92	21.49	10.39	14.03	2.99	7.25	848						
93	21.50	10.40	14.04	3.00	7.26	848						
94	21.51	10.41	14.05	3.01	7.27	848						
95	21.52	10.42	14.06	3.02	7.28	848						
96	21.53	10.43	14.07	3.03	7.29	848						
97	21.54	10.44	14.08	3.04	7.30	848						
98	21.55	10.45	14.09	3.05	7.31	848						
99	21.56	10.46	14.10	3.06	7.32	848						
100	21.57	10.47	14.11	3.07	7.33	848						

GLAUBAUSPATE AND CONJONATIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 2553 - JAMES KENNEDY
 MONTH OF RECORD - FEBRUARY
 DES OF RECORD - 1958 - 12/75
 ALPHAS OF RECORD - 1.2
 ALPHA SCALE - 30.3

X = JAT
 Y = JAT
 XP = JAT
 YP = JAT

CONJONATIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GLAUBAUSPATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
	19.13	8.57	.3013	1.41	5.86	848	18.72	8.89	.2489	1.34	4.10
12							18.78	7.42	.2525	1.32	4.75
24							18.86	7.85	.2630	1.33	5.17
36							18.89	8.13	.2667	1.34	5.37
48							18.94	8.30	.2742	1.34	5.48
60							18.99	8.45	.2776	1.34	5.48
72											

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12869 - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (YIP) - 9
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, YP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, YP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	13.20	7.97	.2650	1.01	4.55	848	12.40	1.10
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, YP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP
12	13.15	8.01	.5196	1.05	4.54	.1345	12.73	6.25
24	13.15	8.03	.5160	1.08	4.55	.1042	12.81	6.27
36	13.11	8.04	.4567	1.10	4.56	.0776	12.87	7.04
48	13.10	8.06	.3747	1.09	4.56	.0475	12.93	7.38
60	13.07	8.01	.2752	1.11	4.57	.0073	13.01	7.65
72	13.02	7.95	.2028	1.13	4.59	.0321	13.03	7.67
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, YP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN YP	S.D. YP	P (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.05	4.54	.5984	13.15	8.01	.1919	.98	3.61
24	1.08	4.55	.4935	13.15	8.03	.2103	.97	3.92
36	1.10	4.56	.3485	13.11	8.04	.2216	.96	4.23
48	1.09	4.56	.2418	13.10	8.06	.2415	.97	4.39
60	1.11	4.57	.1892	13.07	8.01	.2508	.97	4.45
72	1.13	4.59	.1523	13.02	7.95	.2529	.98	4.49

BI-VARIATE AND CONDITIONAL BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

STAT 201 2008 - JUNE JENNIFER
 MONTH OF RECORD - FEBRUARY
 DAY OF RECORD - 1986 - 12/10
 HOUR OF RECORD - 20
 ALPHA ANGLE - 30.0

1 = 1A 1
 2 = 1A 2

1P = 1A 1 + 2
 2P = 1A 2 + 2

BI-VARIATE NORMAL STATISTICS OF X, Y, XP

MEAN X	S.D. X	MEAN Y	S.D. Y	N
8.13	7.58	7.0	3.95	948

CONDITIONAL BI-VARIATE NORMAL STATISTICS FOR XP AND YP

XP	MEAN XP	S.D. XP	MEAN YP	S.D. YP	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	8.13	7.58	7.0	3.95	8.13	7.58	7.0	3.95
24	8.13	7.58	7.0	3.95	8.13	7.58	7.0	3.95
36	8.13	7.58	7.0	3.95	8.13	7.58	7.0	3.95
48	8.13	7.58	7.0	3.95	8.13	7.58	7.0	3.95
60	8.13	7.58	7.0	3.95	8.13	7.58	7.0	3.95
72	8.13	7.58	7.0	3.95	8.13	7.58	7.0	3.95

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12859) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
12	4.25	7.90	.2223	-.12	4.06	848								
12	4.24	7.91	.6519	-.11	4.08		-.11	4.08	.2123	.1399	3.09	.1262	-.37	3.63
24	4.20	7.88	.6249	-.13	4.09		-.13	4.09	.1951	.0756	3.19	.1787	-.34	3.66
36	4.14	7.87	.5427	-.14	4.08		-.14	4.08	.1816	.0773	3.35	.1624	-.30	3.93
48	4.12	7.84	.5242	-.12	4.09		-.12	4.09	.2001	.0482	3.40	.1651	-.32	3.86
60	4.08	7.84	.4356	-.11	4.07		-.11	4.07	.1862	.0602	3.56	.1625	-.28	3.99
72	4.04	7.88	.4099	-.11	4.06		-.11	4.06	.1445	.0409	3.62	.1919	-.26	3.97

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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24 25

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Time	Time
1.75	3:45
3:45	5:15

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
12	4.05	8.35	.2162	.26	3.81	848

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	4.01	8.31	.7227	.21	3.83	.1971	2.45	5.77	.1268	.06	3.47
24	4.01	8.23	.6736	.20	3.84	.1814	2.55	6.17	.1555	.08	3.43
36	3.96	8.21	.6239	.15	3.77	.1637	2.68	6.52	.1511	.10	3.72
48	3.93	8.17	.5958	.12	3.79	.1402	2.73	8.70	.1704	.15	3.63
60	3.97	8.14	.5753	.12	3.78	.1091	2.78	6.83	.1887	.15	3.78
72	3.95	8.17	.5294	.13	3.76	.1055	2.89	7.08	.1924	.17	3.73

QUADRILATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATISTICS - SAME GIVEN
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - JES - 12/70
 A. 1000
 ALPHA ANGLE - 90°

X = UAT
 Y = VAT

XP = UAT
 YP = VAT

QUADRILATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN Y	S.D. Y	P (Y, Y)	MEAN XP	S.D. XP	P (XP, XP)	N
5.02	3.73	.2482	12	3.94	.848	848

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

MEAN XP	S.D. XP	P (XP, XP)	MEAN YP	S.D. YP	P (YP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
5.02	3.73	.2482	12	3.94	.848	2.52	2.52	-.26	2.52	2.52
3.10	3.84	.84	3.10	3.11	.1529	3.10	3.10	.2299	3.10	3.10
4.25	4.53	.76	4.25	3.73	.1930	4.25	4.25	.2001	4.25	4.25
4.50	4.51	.7128	4.50	3.96	.1630	4.50	4.50	.1885	4.50	4.50
4.88	4.55	.6707	4.88	3.83	.1789	4.88	4.88	.1528	4.88	4.88
4.87	4.57	.6742	4.87	3.96	.1293	4.87	4.87	.2343	4.87	4.87
4.77	4.58	.6825	4.77	3.93	.1229	4.77	4.77	.2125	4.77	4.77

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: 12888 - CAPE KENNEDY
 MONTH OF RECORD: FEBRUARY
 PERIOD OF RECORD: 1/55 - 12/70
 ALTITUDE (MM): 27
 AZIMUTH ANGLE: 90.0

X = U/AT T
 Y = V/AT T
 XP = U/AT T + DT
 YP = V/AT T + DT

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	XP	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
		MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	12	5.64	10.54	.1825	.23	3.98	848	3.06	-.10
DT	YP	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (YP, X)	MEAN XP	S.D. YP
		5.61	10.40	.1825	3.97	3.97	.1825	3.97	3.48
		5.57	10.23	.1753	3.95	3.95	.1753	3.70	3.53
		5.48	10.21	.1753	3.94	3.94	.1753	3.83	3.81
		5.53	10.17	.1753	3.92	3.92	.1753	3.65	3.82
60	60	5.50	10.09	.1695	3.91	3.91	.1695	3.93	3.92
72	72	5.44	10.08	.1628	3.83	3.83	.1628	4.10	3.92

BIVARIATE NORMAL STATISTICS OF X, Y

STATION NUMBER - CAPE GARDNER

10 (1971)
10 (1972)

STATION	NO. OF OBS.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
1	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
23	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
24	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
26	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
27	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
29	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
32	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
34	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
35	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
36	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
37	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
38	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
39	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
41	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
42	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
43	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
44	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
45	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
46	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
47	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
48	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
49	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

[illegible]

QUANTILVARIATE NORMAL STATISTICS OF X,Y,YP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN X	S.D. Y	P (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
.07	3.20	-2.107	.00	3.57	930	.09	-.05
MEAN XP	S.D. XP	P (X,YP)	MEAN YP	S.D. YP	P (YP,Y)	MEAN YP	S.D. YP
.03	3.21	.0289	.01	3.57	.1477	.10	3.07
-.00	3.23	.2867	.03	3.59	.1673	.10	3.40
-.01	3.25	.0082	.02	3.59	.1682	.08	3.51
-.02	3.25	.0034	.02	3.59	.1005	.07	3.55
-.03	3.26	.0184	.03	3.54	.0795	.05	3.55
-.06	3.26	.0036	.02	3.53	.0659	.07	3.56
MEAN XP	S.D. XP	P (XP,X)	MEAN YP	S.D. YP	P (YP,X)	MEAN YP	S.D. YP
.03	3.21	.0289	.01	3.57	.1477	.10	3.07
-.00	3.23	.2867	.03	3.59	.1673	.10	3.40
-.01	3.25	.0082	.02	3.59	.1682	.08	3.51
-.02	3.25	.0034	.02	3.59	.1005	.07	3.55
-.03	3.26	.0184	.03	3.54	.0795	.05	3.55
-.06	3.26	.0036	.02	3.53	.0659	.07	3.56

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, YP, YP

STATION NUMBER - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 1
 AREA ACRES - 32.5

QUADRIVARIATE NORMAL STATISTICS OF X, Y, YP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP									
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	R (YP, X)	MEAN YP	S.D. YP	R (YP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN YP	S.D. YP	R (YP, Y)	MEAN YP
DT	3.18	7.08	.0036	1.54	6.24	930													
YP																			
12	3.14	7.04	.0416	1.51	6.23	9456	3.20	6.23	-.3292	3.20	6.23	.3423	3.20	6.23	-.3292	3.20	6.23	.3423	3.20
24	3.17	7.08	.3554	1.52	6.25	2538	3.20	6.25	-.3431	3.20	6.25	.3538	3.20	6.25	-.3431	3.20	6.25	.3538	3.20
36	3.16	7.10	.1136	1.52	6.23	1482	3.18	6.23	-.2023	3.18	6.23	.2318	3.18	6.23	-.2023	3.18	6.23	.2318	3.18
48	3.12	7.11	.0679	1.52	6.20	1450	3.18	6.20	-.1127	3.18	6.20	.1450	3.18	6.20	-.1127	3.18	6.20	.1450	3.18
60	2.87	7.14	.0391	1.53	6.20	1484	3.18	6.20	-.0425	3.18	6.20	.0824	3.18	6.20	-.0425	3.18	6.20	.0824	3.18
72	2.87	7.13	.0345	1.49	6.19	1564	3.19	6.19	-.0075	3.19	6.19	.0644	3.19	6.19	-.0075	3.19	6.19	.0644	3.19

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	7.18	7.29	.6853	1.26	6.13	.5392	.5392	.0438	.3150	-.2423	-.2423	7.30	4.93	-.0586	1.41	4.85
24	7.08	7.33	.4373	1.29	6.13	.2898	.2898	.0555	.3034	-.2849	-.2849	7.33	6.16	-.0088	1.39	5.60
36	7.03	7.42	.2937	1.26	6.12	.0876	.0876	.0650	.2325	-.1827	-.1827	7.31	6.90	-.0036	1.37	5.95
48	6.97	7.49	.1786	1.21	6.07	.0198	.0198	.0730	.1589	-.0805	-.0805	7.31	7.15	.0141	1.35	6.06
60	6.89	7.55	.1481	1.17	6.08	.0168	.0168	.0672	.1135	-.0395	-.0395	7.32	7.21	.0294	1.35	6.09
72	6.77	7.58	.1468	1.14	6.09	-.0056	-.0056	.0670	.0897	-.0271	-.0271	7.34	7.21	.0281	1.34	6.11

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP,YP)	MEAN YP	S.D. YP
12	24	10.75	8.28	.7509	1.23	6.62	930	10.82	5.05	.0535	1.34	5.21	10.73	1.34	.0535	1.34	5.21
24	36	10.66	8.32	.9461	1.24	6.62		10.88	6.49	.0613	1.33	6.10			.0613	1.33	6.10
36	48	10.55	8.42	.3950	1.26	6.59		10.92	7.38	.0520	1.32	6.46			.0520	1.32	6.46
48	60	10.46	8.50	.3218	1.23	6.57		10.94	7.76	.0567	1.31	6.58			.0567	1.31	6.58
60	72	10.38	8.57	.2774	1.17	6.61		10.95	7.93	.0603	1.31	6.60			.0603	1.31	6.60
72		10.28	8.59	.2385	1.13	6.63		10.97	8.03	.0627	1.32	6.61			.0627	1.32	6.61

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128881 - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 50.0
 ALPHA ANGLE - 90.0

X = U(AT, T)
 Y = V(AT, T)
 XP = U(AT, T + DT)
 YP = V(AT, T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP, YP)	MEAN YP	S.D. YP
12	12	14.56	9.28	.0903	1.08	7.35	930	14.35	9.54	.1178	14.45	9.87	14.16	1.02	.0137	1.04	5.87
24	24	14.43	9.33		.5719	.0880		14.35	9.54	.1178	14.45	9.87	14.16	1.02	.0137	1.04	5.87
36	36	14.31	9.36		.3471	.1030		14.45	9.87	.1178	14.51	10.09	14.16	1.02	.0442	1.08	6.76
48	48	14.21	9.44		.1905	.1122		14.51	10.09	.1178	14.58	10.09	14.16	1.02	.0451	1.09	7.13
60	60	14.08	9.51		.0817	.1163		14.58	10.09	.1178	14.62	10.10	14.16	1.02	.0594	1.09	7.29
72	72	13.97	9.60		.0510	.1204		14.62	10.10	.1178	14.65	10.10	14.16	1.02	.0650	1.10	7.32
		13.87	9.65		.0300	.1204		14.65	10.10	.1178			14.16	1.02	.0725	1.10	7.33

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	18.43	10.29	.7903	1.06	7.86	.6162	1.12	7.88	930	18.23	6.07	.0361	.98	6.02
24	18.29	10.30	.6374	1.00	7.81	.3894				18.37	7.67	.0707	1.05	7.08
36	18.19	10.35	.5205	.95	7.73	.2389				18.46	8.59	.1045	1.09	7.54
48	18.05	10.41	.4644	.94	7.77	.1247				18.54	8.98	.1175	1.11	7.76
60	17.93	10.50	.3982	.86	7.81	.0795				18.59	9.35	.1336	1.13	7.83
72	17.81	10.58	.3613	.78	7.81	.0662				18.63	9.52	.1466	1.13	7.85

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFT) - 6
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T : DT)
 YP = V(IAT T : DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
22.67	11.10	.1958	1.45	8.66	930		21.77	1.30
DT HP	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, YP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. YP
12	22.46	11.11	.8048	1.36	8.61	.6626	.1904	6.32
24	22.32	11.14	.6579	1.30	8.57	.4282	.2037	7.66
36	22.18	11.25	.5470	1.25	8.42	.2273	.2008	8.30
48	22.02	11.32	.4795	1.23	8.45	.1360	.2032	9.50
60	21.87	11.41	.4185	1.15	8.48	.0338	.2034	8.58
72	21.70	11.47	.3831	1.09	8.50	.0685	.2109	8.62

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 7
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP
	26.54	12.07	.2262	1.75	9.64	930	25.90	6.85
							MEAN YP	S.D. YP
							25.90	6.85
							26.12	8.87
							26.26	9.94
							26.38	10.51
							26.46	10.88
							26.53	11.08
							MEAN XP	S.D. XP
							25.90	6.85
							26.12	8.87
							26.26	9.94
							26.38	10.51
							26.46	10.88
							26.53	11.08
							MEAN YP	S.D. YP
							25.90	6.85
							26.12	8.87
							26.26	9.94
							26.38	10.51
							26.46	10.88
							26.53	11.08

CONDRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 128891 - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1955 - 12/70
 ALTITUDE (FT) - 0
 AREA (SQ. MI) - 90.0

X = U(1AT, T)
 Y = V(1AT, T)
 XP = U(1AT, T + DT)
 YP = V(1AT, T + DT)

CONDRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT hr	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN XP	S.D. YP
12	30.03	13.12	.8227	1.79	10.44	.7384	1.83	10.45	.2149	1.83	10.45	930	29.07	1.84	7.33	.0997	29.47	6.93
24	29.85	13.14	.6773	1.76	10.42	.5051									9.47	.1280	29.73	8.84
36	29.69	13.26	.5712	1.71	10.31	.3152									10.65	.1437	29.91	9.77
48	29.51	13.37	.5050	1.66	10.33	.1802									11.24	.1652	30.04	10.18
60	29.35	13.50	.4432	1.58	10.37	.1114									11.70	.1970	30.13	10.35
72	29.16	13.59	.3982	1.47	10.36	.0804									11.94	.2098	30.21	10.40

BIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF A, Y, XP, YP

STATION NUMBER - CURE WENDEY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/75
 NUMBER OF OBS - 930
 ALPHA VALUE - .05

BIVARIATE NORMAL STATISTICS OF Y, YP, YD									
DT	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N
12	32.31	14.37	.8154	1.67	12.11	.7370	1.76	12.13	930
24	32.73	14.43	.8241	1.61	12.07	.7332			
36	32.56	14.56	.8245	1.54	11.94	.7377			
48	32.26	14.55	.7222	1.51	11.97	.7568			
60	32.15	14.75	.6070	1.40	11.93	.7534			
72	32.95	14.99	.3617	1.31	11.99	.6562			
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YD									
	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP	P (XP,YD)	MEAN YD	S.D. YD	
	32.33	13.22	.0310	1.57	8.09	.2435			
		10.59	.0623	1.62	10.36	.2410			
		11.62	.0806	1.65	11.33	.1866			
		12.54	.1129	1.71	11.73	.1081			
		12.99	.1521	1.76	12.02	.0815			
		13.27	.1605	1.77	12.08				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (K1) - 10
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	38.06	15.53	.1485	1.75	13.59				930					36.77	1.45		
12	37.88	15.72	.8105	1.68	13.54	.7352	.7352	.1591	.2051	.1059	37.17	9.09	-.0027			1.50	9.13
24	37.73	15.82	.6592	1.60	13.55	.4871	.4871	.1667	.2345	.0619	37.44	11.71	.0257			1.55	11.68
36	37.56	15.96	.5380	1.49	13.55	.2856	.2856	.1737	.2194	.0366	37.64	13.06	.0568			1.62	12.82
48	37.32	16.11	.4528	1.42	13.57	.1495	.1495	.1760	.1856	.0363	37.82	13.83	.0802			1.68	13.26
60	37.08	16.30	.3947	1.28	13.56	.0604	.0604	.1800	.1387	.0246	37.93	14.25	.1052			1.73	13.45
72	36.81	16.40	.3411	1.18	13.56	.0323	.0323	.1890	.0973	.0294	38.04	14.59	.1239			1.75	13.53

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	41.57	16.14	.8276	1.40	15.21	.7433	1.47	15.24	930	40.76	8.96	-.0158	1.19	10.14
24	41.46	16.33	.6743	1.32	15.25	.4911				41.02	11.78	-.0142	1.22	13.09
36	41.30	16.54	.5582	1.20	15.25	.2807				41.25	13.26	.0174	1.29	14.38
48	41.09	16.69	.4668	1.13	15.23	.1274				41.42	14.11	.0568	1.36	14.91
60	40.84	16.88	.4122	1.02	15.20	.0430				41.56	14.54	.0910	1.42	15.12
72	40.55	17.04	.3753	.94	15.20	.0157				41.68	14.79	.1139	1.45	15.20

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 12
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN Y	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	44.58	15.38	.1701	1.53	14.81	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	43.35	1.25

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	44.47	15.56	.8324	1.46	14.60	.7796	.1784	.1687	43.66	8.52	.0667	1.35	9.27
24	44.41	15.78	.6828	1.38	14.88	.5409	.1834	.1434	43.87	11.24	.0700	1.39	12.41
36	44.24	15.96	.5671	1.31	14.96	.3400	.1902	.1281	44.09	12.67	.0895	1.42	13.84
48	44.11	16.14	.4917	1.26	15.04	.1776	.1948	.1123	44.23	13.39	.1108	1.45	14.47
60	43.92	16.36	.4433	1.17	15.04	.0785	.2034	.1013	44.34	13.79	.1326	1.46	14.69
72	43.69	16.54	.3909	1.08	15.07	.0416	.2144	.0801	44.45	14.16	.1504	1.51	14.76

QUACRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112553 - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE - 13
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUACRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN Y	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N
	44.61	13.79	.1992	1.66	13.10	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN XP		S.D. XP		P (X, XP)		MEAN YP		S.D. YP		P (X, YP)		MEAN XP		S.D. XP		P (XP, YP)		MEAN YP		S.D. YP	
	MEAN XP	S.D. XP	MEAN XP	S.D. XP	MEAN YP	S.D. YP	MEAN YP	S.D. YP	MEAN XP	S.D. XP	MEAN YP	S.D. YP	MEAN XP	S.D. XP	MEAN YP	S.D. YP	MEAN XP	S.D. XP	MEAN YP	S.D. YP		
12	44.55	13.95	.8215	.7131	1.58	13.07	.7888	.2015	.1948	.1987	.43.79	7.85	.0053	1.48	8.03							
24	44.54	14.15	.7131	.5640	1.51	13.12	.5640	.2063	.1953	.1660	43.92	8.66	.0663	1.52	10.76							
36	44.47	14.20	.6143	.4491	1.42	13.20	.3491	.2130	.1895	.1412	44.07	10.87	.0932	1.55	12.20							
48	44.37	14.51	.5387	.3987	1.31	13.23	.1912	.2219	.1675	.1012	44.19	11.61	.1231	1.58	12.74							
60	44.25	14.71	.4304	.3044	1.16	13.33	.0945	.2309	.1325	.0796	44.27	12.01	.1458	1.60	12.55							
72	44.10	14.85	.4581	.4581	1.04	13.39	.0663	.2375	.1003	.0610	44.35	12.24	.1637	1.63	13.02							

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	R (X, YP)	MEAN Y	S.D. Y	R (Y, YP)	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	41.19	12.45	.7787	1.32	10.43	930	1.42	10.43	.1794	.0964	40.60	7.74	40.71	9.21	.0398	1.27	8.68	.0268	1.27	8.68	40.60	7.74	.0268	1.27	8.68
24	41.17	12.54	.6646	1.25	10.47				.1598	.0613	40.71	9.21	40.71	9.21	.0398	1.30	8.72	.0398	1.30	8.72	40.71	9.21	.0398	1.30	8.72
36	41.09	12.64	.5803	1.18	10.52				.1668	.0242	40.82	10.02	40.82	10.02	.0686	1.34	9.71	.0686	1.34	9.71	40.82	10.02	.0686	1.34	9.71
48	40.97	12.84	.4905	1.10	10.57				.1747	.0040	40.94	10.70	40.94	10.70	.0805	1.37	10.12	.0805	1.37	10.12	40.94	10.70	.0805	1.37	10.12
60	40.86	13.00	.4358	1.02	10.60				.1858	-.0024	41.02	11.07	41.02	11.07	.0905	1.39	10.27	.0905	1.39	10.27	41.02	11.07	.0905	1.39	10.27
72	40.70	13.10	.4055	.93	10.63				.1919	-.0003	41.09	11.25	41.09	11.25	.0946	1.40	10.33	.0946	1.40	10.33	41.09	11.25	.0946	1.40	10.33

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 A.T.T. (X, Y) - 15
 ALPHA ANGLE - 90.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)
12	24	36.18	10.66	.1018	1.39	9.08	930												
12	24	36.14	10.79		74.17	.1216		35.71	7.10	.0044	1.37	6.04							
24	36	36.05	10.85		.5252	.1268		35.83	8.29	.0146	1.38	7.64							
36	48	35.98	10.96		.3390	.1332		35.92	9.09	.0218	1.39	8.43							
48	60	35.87	11.09		.2100	.1400		36.01	9.64	.0106	1.40	8.78							
60	72	35.71	11.21		.1135	.1491		36.08	9.95	.0133	1.40	8.95							
72		35.59	11.26		.0414	.1522		36.12	10.09	.0128	1.39	9.02							

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 17
 ALPHA ANGLE - 93.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X		S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	MEAN XP	S.D. XP	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (YP, X)						
12	24.30	8.52	.7028	1.16	6.82	.7281	.0833	.1703	-.0392	24.33	.0503	1.31	4.63
24	24.25	8.58	.5484	1.09	6.80	.5482	.0823	.2073	-.0890	24.33	.0460	1.33	5.63
36	24.14	8.67	.4127	1.04	6.80	.3584	.0892	.2253	-.0769	24.36	.0233	1.33	6.25
48	24.06	8.72	.3391	1.00	6.81	.2256	.0964	.2252	-.0574	24.38	.0177	1.32	6.22
60	23.99	8.83	.2658	.93	6.81	.1125	.1111	.2151	-.0334	24.38	.0189	1.31	6.65
72	23.86	8.89	.2681	.84	6.77	.0338	.1156	.1883	-.0136	24.41	.0248	1.29	6.73

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

UT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, XP)	MEAN Y	S.D. Y	R (Y, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	17.64	7.69	.0998	.82	5.64	930	.76	5.66	.1022	.6664	.1864	.0062	.86	5.64	.0411	17.68	6.14	.0411	.86	4.15
24	17.60	7.74	.4475	.5201	5.64		.69	5.64	.1062	.5201	.2235	-.0508	.90	5.64	.0661	17.68	6.14	.0661	.90	4.73
36	17.51	7.77	.3634	.3431	5.64		.64	5.64	.1176	.3431	.2112	-.0565	.90	5.64	.0641	17.69	7.12	.0641	.90	5.21
48	17.40	7.78	.3101	.2367	5.63		.57	5.63	.1356	.2367	.2207	-.0384	.90	5.63	.0530	17.72	7.29	.0530	.90	5.38
60	17.32	7.90	.2533	.1338	5.63		.51	5.63	.1515	.1338	.1778	-.0238	.90	5.62	.0632	17.72	7.42	.0632	.90	5.52
72	17.23	8.01	.2424	.0622	5.64		.45	5.64	.1502	.0622	.1593	-.0016	.89	5.57	.0656	17.74	7.46	.0656	.89	5.57

STATION 128581 - CAPE KENNEDY
 MONTH 5 051040 - MARCH
 OBS ID OF 555580 - 12/75
 OBS ID OF 555580 - 13
 ALTITUDE 14' - 30.0
 X = U(AT T)
 Y = V(AT T)
 XP = J(AT T + DT)
 YP = V(AT T + DT)

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BIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 118883 - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1956 - 1970
 ALTITUDE (FT) - 2
 LONGITUDE (W) - 88.0

BIVARIATE NORMAL STATISTICS OF X, Y, XP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
D.F.	MEAN X	S.D. X	P (X,X)	MEAN Y	S.D. Y	N	P (Y,Y)	MEAN XP	S.D. XP	D.F.	MEAN YP	S.D. YP	P (XP,XP)	MEAN GIVEN Y	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP	D.F.
12	3.71	5.21	.0713	-1.15	3.61	930													
24																			
36																			
48																			
60																			
72																			

BI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12842 - CAPE KENNEDY
 DATE OF RECORD - MAR-68
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE - 22
 ALTITUDE - 30.0

X = U/IAT T)
 Y = V/IAT T)

XP = U/IAT T)
 YP = V/IAT T)

BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN Y GIVEN XP	P (XP, YP) GIVEN Y	S.D. YP GIVEN XP	S.D. XP GIVEN YP
DT	2.07	5.3	.0503	-14	3.57	933									
12	3.23	5.23					293	3.55	.023	1.71	5.00	.024		5.40	3.51
24	5.22	5.22					1447	3.53	.043	1.80	5.40	.090		5.74	3.28
36	5.30	5.30					1073	3.62	.047	1.98	5.82	.078		5.97	3.63
48	5.30	5.30					832	3.61	.047	1.98	5.82	.078		5.97	3.56
60	5.27	5.27					642	3.59	.047	1.98	5.82	.078		5.97	3.56
72	5.23	5.23					2073	3.58	.053	1.98	6.01	.042		6.01	3.59

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112853 - CAPE KENNEDY X = U(AT T)
 MONTH OF RECORD - MARCH Y = V(AT T)
 PERIOD OF RECORD - 1/56 - 12/70 XP = U(AT T - DT)
 LENGTH OF YP - 23 YP = V(AT T - DT)
 ALPHA ANGLE - 90 C

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	R (XP, Y)
12	.60	5.33	.0943	-.28	3.59	930	.28	4.92	.0193	-.29	3.35	-.0161	.0841
24	.79	6.41	.0528	-.26	3.55		.37	5.35	.0455	-.29	3.22	-.0486	.0839
36	.71	6.41	.0544	-.26	3.55		.47	5.67	.0405	-.30	3.54	-.0688	.0575
48	.68	6.39	.0312	-.24	3.56		.52	5.80	.0394	-.29	3.48	-.0169	.0512
60	.62	6.37	.0265	-.27	3.53		.57	5.93	.0468	-.29	3.53	.0210	.0279
72	.59	6.35	.0450	-.29	3.52		.61	6.03	.0391	-.28	3.54	.0243	.0420

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
	-.03	-.20

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2. CIVIL RIGHTS

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12859) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (AM) - 25
 ALPHA ANGLE - 50.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	.82	7.57	.1226	-.56	3.42	930								
24														
36														
48														
60														
72														

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
.13	-.45

UNBIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF Y, Y, YP, YP

STATISTICS OF Y, YP, YP, YP
 MEAN OF Y, YP, YP, YP
 STANDARD DEVIATION OF Y, YP, YP, YP
 CORRELATION COEFFICIENT OF Y, YP, YP, YP
 PROBABILITY OF Y, YP, YP, YP

UNBIVARIATE NORMAL STATISTICS OF Y, YP, YP

MEAN Y	S.D. Y	P Y	MEAN YP	S.D. YP	P YP	N
1.00	0.25	0.05	-0.5	0.25	0.25	100
MEAN YP	S.D. YP	P YP	MEAN Y	S.D. Y	P Y	
0.00	0.25	0.05	1.00	0.25	0.05	
0.25	0.25	0.05	0.75	0.25	0.05	
0.50	0.25	0.05	0.50	0.25	0.05	
0.75	0.25	0.05	0.25	0.25	0.05	
1.00	0.25	0.05	0.00	0.25	0.05	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

MEAN YP	S.D. YP	P YP	MEAN Y	S.D. Y	P Y
0.00	0.25	0.05	1.00	0.25	0.05
0.25	0.25	0.05	0.75	0.25	0.05
0.50	0.25	0.05	0.50	0.25	0.05
0.75	0.25	0.05	0.25	0.25	0.05
1.00	0.25	0.05	0.00	0.25	0.05

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12658) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 27
 AZIMUTH ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	2.01	9.38	.8223	-.62	3.64	.1055	-.62	3.65	930	1.56	5.33	.0126	-.61	3.25
24	1.96	9.39	.7720	-.60	3.67					1.62	5.98	.0821	-.60	3.28
36	1.92	9.38	.7006	-.62	3.67					1.70	6.70	.0760	-.61	3.54
48	1.84	9.33	.6691	-.61	3.68					1.76	7.00	.1183	-.61	3.54
60	1.76	9.29	.6234	-.63	3.69					1.83	7.37	.1149	-.62	3.63
72	1.67	9.27	.5638	-.63	3.69					1.89	7.78	.1305	-.62	3.64

BIAPRIATE NORMAL STATISTICS OF X, Y

STATION 112858 - CAPE KENNEDY

X = UAT
Y = VAT

MONTH	PER. OF REC.	ALPHA DEG.	MEAN X	MEAN Y	S.D. X	R (X,Y)	MEAN X	MEAN Y	S.D. Y	N
1	1/55 - 12/70	90.0	3.07	1.00	3.20	-.2107	3.07	1.00	3.57	930
2	1/55 - 12/70	90.0	3.19	1.64	7.05	.0096	3.19	1.64	6.24	930
3	1/55 - 12/70	90.0	7.22	1.31	7.32	.0412	7.22	1.31	6.13	930
4	1/55 - 12/70	90.0	10.87	1.28	8.27	.0818	10.87	1.28	6.64	930
5	1/55 - 12/70	90.0	14.55	1.08	9.29	.0533	14.55	1.08	7.35	930
6	1/55 - 12/70	90.0	18.53	1.12	10.23	.1555	18.53	1.12	7.88	930
7	1/55 - 12/70	90.0	22.57	1.45	11.10	.1528	22.57	1.45	8.66	930
8	1/55 - 12/70	90.0	26.54	1.75	12.07	.2252	26.54	1.75	9.64	930
9	1/55 - 12/70	90.0	30.20	1.88	13.06	.2143	30.20	1.88	10.45	930
10	1/55 - 12/70	90.0	34.12	1.76	14.26	.1757	34.12	1.76	12.13	930
11	1/55 - 12/70	90.0	38.05	1.75	15.53	.1465	38.05	1.75	13.53	930
12	1/55 - 12/70	90.0	41.75	1.47	15.92	.1332	41.75	1.47	15.24	930
13	1/55 - 12/70	90.0	44.58	1.53	15.38	.1701	44.58	1.53	14.81	930
14	1/55 - 12/70	90.0	47.61	1.65	13.79	.1882	47.61	1.65	13.10	930
15	1/55 - 12/70	90.0	41.24	1.42	12.35	.1337	41.24	1.42	10.43	930
16	1/55 - 12/70	90.0	36.18	1.39	10.66	.1018	36.18	1.39	9.08	930
17	1/55 - 12/70	90.0	30.54	1.15	9.31	.0516	30.54	1.15	7.78	930
18	1/55 - 12/70	90.0	24.31	1.22	8.46	.0734	24.31	1.22	6.85	930
19	1/55 - 12/70	90.0	17.64	.82	7.69	.0398	17.64	.82	5.64	930
20	1/55 - 12/70	90.0	11.16	.49	6.97	.1247	11.16	.49	4.60	930
21	1/55 - 12/70	90.0	6.66	.22	6.55	.1189	6.66	.22	3.97	930
22	1/55 - 12/70	90.0	3.71	-.10	6.21	.0719	3.71	-.10	3.61	930
23	1/55 - 12/70	90.0	2.07	-.14	6.31	.0503	2.07	-.14	3.67	930
24	1/55 - 12/70	90.0	.83	-.28	6.45	.0243	.83	-.28	3.59	930
25	1/55 - 12/70	90.0	.53	-.43	6.81	.0817	.53	-.43	3.71	930
26	1/55 - 12/70	90.0	1.82	-.56	7.57	.1226	1.82	-.56	3.42	930
27	1/55 - 12/70	90.0	1.62	-.61	8.32	.1246	1.62	-.61	3.35	930
28	1/55 - 12/70	90.0	2.04	-.62	9.42	.1066	2.04	-.62	3.85	930

QUADRIADRIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12883) - CAPE WENDELL
 MAG. OF DEC. 1950 - 1756
 PERIOD OF RECORD - 1756 - 1870
 ALTITUDE (M) - 0
 ALPHA ANGLE - 85.0

X = U'AT T
 Y = V'AT T
 XP = U'AT T + OT
 YP = V'AT T + OT

QUADRIADRIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
OT	-1.06	3.18	-0.1579	.47	3.14	903
12	-1.10	3.17				
24	-1.11	3.13				
36	-1.14	3.11				
48	-1.14	3.10				
60	-1.16	3.09				
72	-1.15	3.09				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X GIVEN Y	S.D. X GIVEN Y	MEAN Y GIVEN X	S.D. Y GIVEN X
OT	-1.10	3.17		.47	3.14	-1.07	3.10	.46	3.13
12	-1.11	3.13							
24	-1.14	3.11							
36	-1.14	3.10							
48	-1.16	3.09							
60	-1.16	3.09							
72	-1.15	3.09							

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN X	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.94	6.51	.7090	1.19	5.24	.6002	1.20	5.26	900	.89	1.20	1.20	.92	4.12	-.0132	1.19	3.97
24	.92	6.44	.6487	1.19	5.20	.3246	1.20	5.26	900	.89	1.20	1.20	.94	5.20	-.0328	1.20	4.70
36	.89	6.38	.2233	1.18	5.19	.0633	1.20	5.26	900	.89	1.20	1.20	.96	6.01	-.0570	1.20	5.14
48	.86	6.33	.1625	1.19	5.15	-.0249	1.20	5.26	900	.89	1.20	1.20	.96	6.35	-.0544	1.20	5.23
60	.84	6.30	.1481	1.19	5.16	-.0385	1.20	5.26	900	.89	1.20	1.20	.97	6.44	-.0460	1.20	5.24
72	.87	6.32	.1755	1.20	5.11	-.0388	1.20	5.26	900	.89	1.20	1.20	.97	6.44	-.0402	1.20	5.25

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12368) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (Y, YP)	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	3.63	7.14	.0651	.16	5.17	.0596	5.17	.12	7.06	.0596	.09	5.06
24						.0544	5.14	.10	7.00	.0544	.08	5.11
36						.0496	5.11	.08	6.93	.0496	.07	5.09
48						.0477	5.09	.07	6.88	.0477	.10	5.08
60						.0578	5.08	.10	6.83	.0578	.09	5.06
72						.0574	5.06	.09	6.83	.0574	.09	5.06

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	3.62	7.06	.0233	.17	3.83
24	3.57	6.93	.0213	.17	4.61
36	3.55	6.88	.0148	.15	5.00
48	3.50	6.84	.0280	.16	5.12
60	3.48	6.86	.0402	.16	5.15
72	3.48	6.88	.0527	.15	5.17

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112683 - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	6.04	8.04	.0509	-1.82	5.97	960	5.91	-1.70

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	5.89	7.93	.8105	-.83	5.97	.6693	.6693	.2230	5.92	4.36	.0283	-.70	4.28
24	5.91	7.94	.6312	-.93	5.95	.4152	.4152	.2521	5.95	5.79	.0228	-.73	5.23
36	5.86	7.86	.4773	-.97	5.92	.2227	.2227	.2192	5.98	6.78	-.0210	-.75	5.68
48	5.78	7.80	.3250	-.98	5.90	.1403	.1403	.1430	6.02	7.26	.0219	-.77	5.85
60	5.72	7.73	.3395	-.94	5.87	.0765	.0765	.1051	6.06	7.47	.0277	-.79	5.92
72	5.70	7.73	.3206	-.93	5.83	.0422	.0422	.0666	6.07	7.55	.0370	-.80	5.95

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12853) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T : DT)
 YP = V(1AT T : DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	8.60	8.74	.0932	-1.40	6.56	900	8.43	4.47	.0982	-1.18	4.59	.0982	-1.18	4.59
24							8.48	6.03	.0500	-1.25	5.74	.0500	-1.25	5.74
36							8.52	7.04	.0745	-1.29	6.19	.0745	-1.29	6.19
48							8.58	7.94	.0746	-1.32	6.42	.0746	-1.32	6.42
60							8.63	7.85	.0851	-1.36	6.51	.0851	-1.36	6.51
72							8.66	7.99	.0839	-1.37	6.53	.0839	-1.37	6.53

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
8.44	-1.12

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 129523 - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE - 50.0
 ALPHA ANGLE - 50.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT Y + DT)
 YP = V(1AT Y + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. XP	P (XP, Y)	MEAN YP	S.D. YP	P (XP, YP)	MEAN XP	S.D. YP	P (XP, YP)	MEAN YP	S.D. YP
12	11.13	9.59	.1333	-1.70	5.82	.900								
24														
36														
48														
60														
72														

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN YP	P (XP, YP)	MEAN XP	S.D. YP	P (XP, YP)	MEAN YP	S.D. YP
12	11.03	-1.33						
24								
36								
48								
60								
72								

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12862) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 6
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T : DT)
 YP = V(1AT T : DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

DT	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	GIVEN Y	GIVEN YP	P (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	13.81	10.52	.0518	-1.38	7.33	.5361	-1.53	7.29	900	13.75	-1.55	.0790	13.73	5.40	-1.72	5.13
24	13.61	10.56	.0553	-2.21	7.30	.5042						.1557	13.90	5.87	-1.75	5.23
36	13.48	10.52	.0391	-2.25	7.33	.3136						.1713	13.84	7.21	-1.73	5.87
48	13.34	10.45	.0561	-2.22	7.27	.2085						.1772	14.01	8.40	-1.82	7.11
60	13.26	10.43	.0573	-2.25	7.25	.1780						.1831	14.06	8.96	-1.85	7.18
72	13.22	10.39	.0569	-2.23	7.23	.1753						.1864	14.07	9.30	-1.86	7.18

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112858) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KHI) - 7
 ALPHA ANGLE - 93.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	16.71	11.65	.8749	-2.30	8.03	.6886	.1976	.0759	16.65	5.52	.0950	-2.13	5.73
24	16.49	11.62	.7593	-2.36	7.97	.5055	.1838	-.0173	16.81	7.34	.1797	-2.12	6.83
36	16.28	11.59	.6616	-2.40	7.95	.3387	.1787	-.0728	16.92	8.42	.2193	-2.14	7.50
48	16.14	11.50	.5893	-2.45	7.85	.2480	.1732	-.0944	16.97	9.16	.2359	-2.16	7.75
60	16.05	11.41	.5272	-2.43	7.84	.2193	.1658	-.0725	17.02	9.72	.2451	-2.19	7.82
72	16.00	11.36	.4744	-2.41	7.82	.2185	.1618	-.0626	17.02	10.12	.2464	-2.20	7.82

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. Y	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
16.79	11.65	.1917	-2.17	8.02	900	16.60	-2.07

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 8
 ALPHA ANGLE - 30.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 19.71
 S.D. X 12.80
 R (X, Y) .1907
 MEAN Y -2.69
 S.D. Y 8.76
 N 900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X 19.58
 GIVEN Y -2.52

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	19.59	12.79	.8573	-2.71	8.76	.7072	19.67	6.49	.0780	-2.56	6.10
24	19.35	12.77	.7390	-2.77	8.73	.5300	19.83	8.45	.1420	-2.54	7.32
36	19.15	12.72	.6285	-2.78	8.71	.3663	19.93	9.62	.1847	-2.56	8.08
48	18.95	12.65	.5669	-2.82	8.63	.2635	20.01	10.35	.2061	-2.58	8.43
60	18.66	12.56	.5041	-2.78	8.61	.2274	20.04	10.92	.2294	-2.62	8.53
72	18.80	12.49	.4500	-2.74	8.61	.2075	20.04	11.31	.2422	-2.65	8.57

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 9
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	22.39	14.44	.8614	-2.08	10.00	.7113	22.44	7.27	.0821	-2.90	10.00	.1092	22.44	7.27	.0821	-2.90	6.92
24	22.14	14.39	.7384	-2.13	9.95	.5017	22.62	9.63	.1314	-2.90	9.95	.0330	22.62	9.63	.1314	-2.90	8.50
36	21.91	14.33	.6393	-3.16	9.95	.3452	22.74	10.90	.1770	-2.91	9.95	-.0184	22.74	10.90	.1770	-2.91	9.27
48	21.68	14.26	.5582	-3.20	9.83	.2484	22.84	11.82	.2110	-2.93	9.83	-.0283	22.84	11.82	.2110	-2.93	9.54
60	21.56	14.18	.5007	-3.15	9.83	.2300	22.89	12.41	.2403	-2.37	9.83	-.0173	22.89	12.41	.2403	-2.37	9.72
72	21.48	14.09	.4508	-3.11	9.88	.2008	22.90	12.83	.2591	-3.01	9.88	-.0136	22.90	12.83	.2591	-3.01	9.79

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
22.34	14.47	.2126	-3.06	10.00	.900	22.32	-2.83									

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
22.32	-2.83

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12652) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 10
 ALPHA ANGLE - 90.0

X = U/AT T)
 Y = V/AT T)
 XP = U/AT T + DT)
 YP = V/AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	R (XP, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	25.57	15.70	.2638	-3.69	11.49	900	25.45	7.79	.1338	-3.42	7.77	.1711	25.66	10.30	.2968	25.45	7.79	.1338	-3.42	7.77
24	25.41	15.62	.8655	5.372	11.44		25.66	10.30	.2968	-3.45	9.57	.0946	25.66	10.30	.2968	25.66	10.30	.2968	-3.45	9.57
36	25.12	15.57	.7476	3.919	11.38		25.80	11.80	.2506	-3.48	10.95	.0471	25.80	11.80	.2506	25.80	11.80	.2506	-3.48	10.95
48	24.87	15.55	.6477	2.856	11.28		25.86	12.72	.2639	-3.51	11.00	.0271	25.86	12.72	.2639	25.86	12.72	.2639	-3.51	11.00
60	24.69	15.47	.5727	2.303	11.28		25.92	13.32	.3145	-3.56	11.19	.0201	25.92	13.32	.3145	25.92	13.32	.3145	-3.56	11.19
72	24.53	15.37	.5168	2.077	11.26		25.96	13.86	.3267	-3.60	11.23	.0215	25.96	13.86	.3267	25.96	13.86	.3267	-3.60	11.23

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	25.57	15.70	.2638	-3.69	11.49	900	25.45	7.79	.1338	-3.42	7.77

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KH) - 11
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	28.66	16.86	.8635	-4.43	12.99	.7316	-4.35	12.98	900	.1834	28.73	8.33	.1102	-4.09	8.77
24	28.35	16.76	.7622	-4.47	12.92	.5346				.1401	28.96	10.91	.1787	-4.12	10.88
36	28.10	16.67	.6723	-4.50	12.84	.3521				.1057	29.10	12.47	.2267	-4.15	11.87
48	27.98	16.59	.5345	-4.54	12.75	.3053				.0878	29.21	13.56	.2658	-4.18	12.34
60	27.76	16.45	.5242	-4.54	12.81	.2311				.0665	29.22	14.36	.2948	-4.25	12.62
72	27.84	16.30	.4758	-4.51	12.80	.1986				.0681	29.26	14.85	.3133	-4.31	12.68

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
28.59	-4.05

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112858) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 12
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	31.91	17.34	.2684	-4.73	13.94	900	31.91	8.07	.1563	-4.60	9.12	.1563	-4.60	9.12
24	31.38	17.17	.2687	-4.93	13.95	900	31.38	8.07	.1563	-4.60	9.12	.1563	-4.60	9.12
36	31.13	17.12	.2687	-5.02	13.89	900	31.13	8.07	.1563	-4.60	9.12	.1563	-4.60	9.12
48	30.85	17.02	.2687	-5.06	13.79	900	30.85	8.07	.1563	-4.60	9.12	.1563	-4.60	9.12
60	30.57	16.86	.2687	-5.08	13.02	900	30.57	8.07	.1563	-4.60	9.12	.1563	-4.60	9.12
72	30.52	16.71	.2687	-5.06	13.79	900	30.52	8.07	.1563	-4.60	9.12	.1563	-4.60	9.12

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	31.72	17.27	.2687	-4.93	13.95	.2687	31.72	8.07	.1563	-4.60	9.12
24	31.38	17.17	.2687	-5.02	13.89	.2687	31.38	8.07	.1563	-4.60	9.12
36	31.13	17.12	.2687	-5.06	13.79	.2687	31.13	8.07	.1563	-4.60	9.12
48	30.85	17.02	.2687	-5.08	13.02	.2687	30.85	8.07	.1563	-4.60	9.12
60	30.57	16.86	.2687	-5.06	13.79	.2687	30.57	8.07	.1563	-4.60	9.12
72	30.52	16.71	.2687	-5.06	13.79	.2687	30.52	8.07	.1563	-4.60	9.12

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12881) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 13
 ALPHA ANGLE - 90.0

Y = U1AT T)
 Y = V1AT T)

XP = U1AT T + DT)
 YP = V1AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (XP, YP)	MEAN YP	S.D. YP
DT HR	33.91	16.46	.3013	-4.76	13.14	900	33.71	7.33	.1820	-4.65	8.02	.1820	-4.65	8.02
12	33.68	16.39	.8723	.7923	.2953	.2855	33.94	7.33	.1820	-4.65	8.02	.1820	-4.65	8.02
24	33.33	16.33	.7923	.6923	.2937	.2832	34.21	9.94	.2423	-4.58	10.40	.2423	-4.58	10.40
36	33.02	16.26	.7023	.6023	.2917	.1893	34.33	11.74	.2523	-4.59	11.73	.2523	-4.59	11.73
48	32.78	16.14	.6387	.5371	.2835	.1170	34.51	12.65	.3308	-4.61	12.32	.3308	-4.61	12.32
60	32.57	16.02	.5784	.4645	.2754	.0525	34.58	13.42	.3444	-4.67	12.68	.3444	-4.67	12.68
72	32.43	15.93	.5246	.4337	.2685	.0253	34.60	14.01	.3523	-4.71	12.77	.3523	-4.71	12.77

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (XP, YP)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (XP, YP)	MEAN YP	S.D. YP
DT HR	33.91	16.46	.3013	-4.76	13.14	900	33.71	7.33	.1820	-4.65	8.02	.1820	-4.65	8.02
12	33.68	16.39	.8723	.7923	.2953	.2855	33.94	7.33	.1820	-4.65	8.02	.1820	-4.65	8.02
24	33.33	16.33	.7923	.6923	.2937	.2832	34.21	9.94	.2423	-4.58	10.40	.2423	-4.58	10.40
36	33.02	16.26	.7023	.6023	.2917	.1893	34.33	11.74	.2523	-4.59	11.73	.2523	-4.59	11.73
48	32.78	16.14	.6387	.5371	.2835	.1170	34.51	12.65	.3308	-4.61	12.32	.3308	-4.61	12.32
60	32.57	16.02	.5784	.4645	.2754	.0525	34.58	13.42	.3444	-4.67	12.68	.3444	-4.67	12.68
72	32.43	15.93	.5246	.4337	.2685	.0253	34.60	14.01	.3523	-4.71	12.77	.3523	-4.71	12.77

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 14
 ALPHA ANGLE - 50.0

X = U(1, T)
 Y = V(1, T)
 XP = U(1, T + DT)
 YP = V(1, T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
32.07	14.38	.3158	-4.34	11.44	900

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT MR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	R (XP, Y)	R (XP, YP)	MEAN YP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	31.85	14.33	.8711	-4.44	11.54	.8000		.3113	.3165	32.10	7.68	.1600	-4.24	8.61
24	31.57	14.22	.7753	-4.55	11.55	.6357		.3117	.2840	32.32	8.99	.2418	-4.17	8.77
36	31.31	14.23	.6935	-4.64	11.52	.4743		.3133	.2212	32.47	10.33	.2922	-4.16	10.03
48	31.18	14.19	.6198	-4.73	11.47	.3008		.3082	.1601	32.50	11.23	.3318	-4.21	10.65
60	31.05	14.10	.5537	-4.73	11.47	.2746		.3036	.1092	32.53	11.95	.3387	-4.21	10.99
72	30.96	13.96	.4999	-4.74	11.43	.2221		.2561	.0509	32.54	12.43	.3583	-4.26	11.15

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENEDY
 MONTH OF RECORD - APR.
 PERIOD OF RECORD - 1958 - 12/70
 NUMBER OF RECORDS - 15
 LATITUDE (N) - 29.0
 LONGITUDE (W) - 90.0

X = UAT (Z)
 Y = V (A) (Z)

XP = UAT (Z)
 YP = V (A) (Z)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN
 Y
 29.09

S.D.
 Y
 12.04

P
 2555

MEAN
 Y
 -3.47

S.D.
 Y
 3.14

N
 910

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR YP AND YP

MEAN
 Y
 -3.47

S.D.
 Y
 3.14

P
 2555

MEAN
 Y
 -3.47

S.D.
 Y
 3.14

N
 910

0.72

MEAN
 YP
 27.06

S.D.
 YP
 11.51

P
 1555

MEAN
 YP
 -3.47

S.D.
 YP
 3.14

P
 2555

MEAN
 YP
 -3.47

S.D.
 YP
 3.14

P
 2555

MEAN
 YP
 -3.47

S.D.
 YP
 3.14

P
 2555

MEAN
 YP
 -3.47

S.D.
 YP
 3.14

0.72

[illegible][illegible]

BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP														CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
MEAN X		S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN Y		GIVEN XP		S.D. YP		MEAN YP		S.D. YP				
MEAN	S.D.	P	MEAN	S.D.	N														
23.03	10.26	.2958	-3.06	7.98	300			22.98	-2.37										
MEAN XP		S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	P (XP, YP)	P (XP, Y)	P (YP, X)	MEAN XP	S.D. XP	MEAN YP	S.D. YP						
MEAN	S.D.	P	MEAN	S.D.	P	P	P	P	P	MEAN	S.D.	MEAN	S.D.						
22.87	10.12	.2954	-3.15	7.92	.2631	.7326	.2631	.3144	.265	23.12	8.52	-2.31	7.77						
22.84	9.96	.2957	-3.21	7.84	.2715	.6448	.2715	.3056	.263	23.25	8.39	-2.39	7.73						
22.83	9.96	.2953	-3.23	7.83	.2732	.6431	.2732	.2933	.261	23.26	8.33	-2.36	7.69						
22.82	9.94	.2957	-3.25	7.84	.2734	.6429	.2734	.2931	.261	23.26	8.33	-2.36	7.69						
22.84	9.73	.2951	-3.34	7.73	.2767	.6357	.2767	.2857	.258	23.43	8.03	-2.34	7.70						

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1288) - CAPE KENNEDY
 MONTH OF RECORD - APR
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 10
 ALPHA ANGLE - 30.0

X = U/A
 Y = V/A

XP = U/A
 YP = V/A

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (XP, YP)	MEAN YP	S.D. YP
12	17.30	9.19	.2745	-2.45	6.71	900	17.49	5.60	.2318	-2.32	4.37	.2046	-2.32	4.37
24							17.53	5.67	.2316	-2.28	5.28	.2046	-2.28	5.28
36							17.55	7.33	.2396	-2.25	6.16	.2046	-2.25	6.16
48							17.70	7.70	.2339	-2.26	6.36	.2046	-2.26	6.36
60							17.71	8.03	.2371	-2.26	6.49	.2046	-2.26	6.49
72							17.71	8.28	.2346	-2.28	6.49	.2046	-2.28	6.49

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0
 $X = U(AT \ T)$
 $Y = V(AT \ T)$
 $XP = U(AT \ T + DT)$
 $YP = V(AT \ T + DT)$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	R (XP, Y)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	10.76	7.78	.7655	-2.04	5.26	.2784	-2.03	5.23	900	.1882	.3799	.2867	11.11	5.04	.0138	-1.94	3.56
24	10.61	7.71	.6752	-2.07	5.24					.1598	.4197	.3041	11.18	5.78	.0236	-1.90	4.17
36	10.49	7.67	.6043	-2.11	5.19					.1328	.4144	.3143	11.23	6.24	.0601	-1.87	4.56
48	10.35	7.63	.5351	-2.11	5.16					.1353	.3614	.3178	11.27	6.62	.1140	-1.86	4.81
60	10.23	7.53	.4855	-2.14	5.14					.1281	.3244	.3130	11.31	6.86	.1471	-1.85	4.93
72	10.14	7.44	.4675	-2.15	5.12					.1032	.2610	.3083	11.34	6.93	.1848	-1.87	5.04

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
11.01	-1.95

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 19
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	S.D. YP
12	5.19	6.95	.6717	-1.40	4.22	.5725	.2895	5.31	7.02	.2816	-1.38	4.22	900	5.39	-1.26	.1260	5.44	5.20	3.39
24	5.09	6.89	.6224	-1.40	4.21	.4633	.3043									.1429	5.49	5.49	3.65
36	4.97	6.82	.5662	-1.44	4.13	.2905	.3135									.1108	5.55	5.79	3.86
48	4.87	6.76	.5245	-1.44	4.10	.2341	.3250									.1190	5.59	5.98	3.90
60	4.81	6.74	.4604	-1.46	4.08	.1053	.3215									.1507	5.59	6.23	3.97
72	4.79	6.61	.4457	-1.47	4.09	.0967	.3182									.1797	5.59	6.29	4.04

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	1.59	6.03	.6877	-1.05	3.86	.4477	-1.05	3.87	900	1.82	4.41	.0331	-0.94	3.37
24	1.51	6.01	.6256	-1.08	3.84	.4059	-1.08	3.84		1.85	4.74	.0423	-0.92	3.43
36	1.46	5.98	.5413	-1.10	3.82	.2075	-1.10	3.82		1.87	5.11	.0998	-0.96	3.69
48	1.41	5.94	.5158	-1.10	3.81	.1973	-1.10	3.81		1.88	5.19	.1171	-0.95	3.70
60	1.38	5.91	.4752	-1.11	3.79	.1183	-1.11	3.79		1.88	5.34	.1268	-0.96	3.74
72	1.33	5.84	.4444	-1.11	3.78	.1251	-1.11	3.78		1.88	5.44	.1516	-0.96	3.76

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	1.80	-0.86

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 21
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN Y	S.D. Y	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-0.63	5.24	.6353	-1.08	3.23	.2572	-1.06	3.25	900	-0.56	4.04	.1043	-1.04	3.12	-0.52	4.18	.1285	-0.56	4.04	.1043	-1.04	3.12
24	-0.70	5.23	.6019	-1.08	3.23	.3772	-1.06	3.25	900	-0.52	4.18	.1237	-1.02	3.01	-0.50	4.41	.1333	-0.50	4.41	.1333	-1.02	3.01
36	-0.75	5.20	.5384	-1.11	3.22	.0980	-1.06	3.25	900	-0.50	4.41	.0584	-1.03	3.17	-0.50	4.65	.1259	-0.50	4.65	.1259	-1.03	3.17
48	-0.79	5.16	.4578	-1.10	3.22	.1898	-1.06	3.25	900	-0.50	4.65	.0905	-1.05	3.23	-0.50	4.87	.1416	-0.50	4.87	.1416	-1.05	3.23
60	-0.81	5.15	.3665	-1.10	3.18	.0070	-1.06	3.25	900	-0.51	4.93	.0309	-1.05	3.24	-0.51	5.17	.1046	-0.51	5.17	.1046	-1.05	3.24
72	-0.83	5.10	.3367	-1.08	3.18	.0254	-1.06	3.25	900	-0.51	5.17	.0309	-1.05	3.24	-0.51	5.17	.1046	-0.51	5.17	.1046	-1.05	3.24

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
-0.58	-0.99

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-2.01	4.89	.0979	-.80	3.03	900	-2.03	3.62	.0704	-2.03	3.62	.0415	-2.03	3.62	.0415	-2.03	3.62	.0415	-.79	2.92
24	-2.05	4.87	.0930	-.77	3.03	900	-2.03	3.62	.0930	-2.03	3.62	.0466	-2.03	3.62	.0466	-2.03	3.62	.0466	-.79	2.79
36	-2.07	4.85	.0930	-.76	3.01	900	-2.03	3.62	.0930	-2.03	3.62	.0414	-2.03	3.62	.0414	-2.03	3.62	.0414	-.79	3.00
48	-2.10	4.83	.0956	-.76	3.01	900	-2.03	3.62	.0956	-2.03	3.62	.0501	-2.03	3.62	.0501	-2.03	3.62	.0501	-.80	2.96
60	-2.14	4.82	.0957	-.75	3.01	900	-2.03	3.62	.0957	-2.03	3.62	.0735	-2.03	3.62	.0735	-2.03	3.62	.0735	-.79	3.03
72	-2.18	4.79	.0957	-.75	3.01	900	-2.03	3.62	.0957	-2.03	3.62	.0735	-2.03	3.62	.0735	-2.03	3.62	.0735	-.79	3.03

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN X	S.D. X	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-2.78	4.91	.6293	-.73	2.92	.3018	.0264	-2.73	4.92	-.72	2.94	900	-2.81	-.75	-2.75	3.79	-.0096	-.73	2.80
24	-2.83	4.82	.6113	-.72	2.90	.3794	.0420								-2.72	3.68	-.0420	-.74	2.72
36	-2.84	4.78	.5105	-.70	2.88	.1304	.0458								-2.72	4.20	.0263	-.73	2.92
48	-2.86	4.77	.4548	-.67	2.86	.1347	.0476								-2.72	4.36	.0016	-.74	2.92
60	-2.87	4.75	.3467	-.65	2.85	-.0281	.0551								-2.71	4.61	.0272	-.72	2.94
72	-2.89	4.72	.3037	-.62	2.84	-.0705	.0542								-2.71	4.69	.0205	-.71	2.93

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (GROUP) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 24
 ALPHA ANGLE - 90.0

X = U(AT 2)
 Y = V(AT 2)

XP = U(AT 1 + DT)
 YP = V(AT 1 + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	-2.87	5.27	.0941	-.75	2.97	900	-2.87	-.78
DT HP	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. YP
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. YP
12	-2.93	5.27	.7036	-.75	2.94	.3301	.0574	2.81
24	-2.97	5.22	.6450	-.74	2.93	.3543	.0744	2.78
36	-2.99	5.21	.5552	-.70	2.91	.1201	.0477	2.95
48	-3.01	5.17	.4977	-.65	2.88	.1009	.0298	2.96
60	-3.00	5.12	.3735	-.65	2.83	-.0084	-.0235	2.97
72	-3.02	5.11	.3058	-.59	2.90	-.0425	.0877	2.97

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) - 25
 ALPHA ANGLE - 90.0

X = U(1, T)
 Y = V(1, T)
 XP = U(1, T + DT)
 YP = V(1, T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
	-2.61	5.85	.1695	-.78	3.00	900	-2.57	4.06	.0933	-.81	2.79
DT											
MR											
12	-2.63	5.86	.7168	.3562	.1875	.1388	.2101	.0933	.1788	-.81	2.85
24	-2.66	5.82	.6793	.3075	.1839	.0759	.1635	.1788	.1921	-.79	2.98
36	-2.70	5.78	.5763	.1057	.1775	.0482	.1463	.2222	.2222	-.80	2.98
48	-2.72	5.73	.5316	.0889	.1737	-.0046	.1225	.2249	.2249	-.78	2.99
60	-2.74	5.69	.3966	-.0355	.1615	-.0365	.0413	.2127	.2127	-.77	2.99
72	-2.73	5.65	.3445	-.0653	.1589	-.0305					

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-2.57	4.06	.0933	-.81	2.79
DT					
MR					
12	-2.57	4.06	.0933	-.81	2.85
24	-2.56	4.29	.1788	-.81	2.98
36	-2.55	4.77	.1921	-.79	2.98
48	-2.55	4.95	.2222	-.80	2.98
60	-2.55	5.38	.2249	-.78	2.99
72	-2.55	5.49	.2127	-.77	2.99

STATION (12868) - CASE KENNEDY
MONTH OF RECORD - APRIL-
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 26
ALPHA ANGLE - 90.0

X - UCAT T)

Y - V(AT T)

$$x^p = U(\lambda^T \tau + \sigma \tau)$$
$$Y_P = V(A) \cdot Y + DT$$

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 27
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, X)
12	-1.36	7.23	.0995	-.77	3.15	900	-1.17	4.05	-.0748	-.76	2.90	.1398
24							-1.14	4.48	.0308	-.76	2.96	.0757
36							-1.11	5.19	.0160	-.75	3.11	.0901
48							-1.10	5.46	.0777	-.76	3.14	.0365
60							-1.10	6.03	.0684	-.75	3.14	.0602
72							-1.10	6.25	.0998	-.76	3.15	.0089

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN
X
-1.20

GIVEN
Y
-.78

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12888) - CAPE KENNEDY

X - U/IAT T)
Y - VIAT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
"	1/56 - 12/70	0	90.0	-1.08	3.18	-.1579	.47	3.14	900
"	1/56 - 12/70	1	90.0	3.65	6.56	-.0311	1.20	5.26	900
"	1/56 - 12/70	2	90.0	6.04	7.14	.0651	.16	5.17	900
"	1/56 - 12/70	3	90.0	8.60	8.04	.0509	-.82	5.97	900
"	1/56 - 12/70	4	90.0	11.13	8.74	.0332	-1.40	6.56	900
"	1/56 - 12/70	5	90.0	13.90	9.69	.1393	-1.70	6.83	900
"	1/56 - 12/70	6	90.0	16.79	10.63	.1611	-1.93	7.29	900
"	1/56 - 12/70	7	90.0	19.71	11.65	.1917	-2.27	8.02	900
"	1/56 - 12/70	8	90.0	22.54	12.80	.2126	-2.69	8.76	900
"	1/56 - 12/70	9	90.0	25.57	14.47	.2638	-3.06	10.00	900
"	1/56 - 12/70	10	90.0	28.80	15.70	.2498	-3.69	11.44	900
"	1/56 - 12/70	11	90.0	31.91	16.91	.2684	-4.35	12.83	900
"	1/56 - 12/70	12	90.0	32.07	17.34	.3013	-4.73	13.94	900
"	1/56 - 12/70	13	90.0	28.08	16.46	.3158	-4.76	13.14	900
"	1/56 - 12/70	14	90.0	23.03	14.38	.2965	-4.34	11.44	900
"	1/56 - 12/70	15	90.0	17.30	12.04	.2568	-3.47	9.14	900
"	1/56 - 12/70	16	90.0	10.91	10.26	.2746	-3.06	7.96	900
"	1/56 - 12/70	17	90.0	5.31	9.19	.2764	-2.45	6.71	900
"	1/56 - 12/70	18	90.0	1.67	7.85	.2816	-2.03	5.23	900
"	1/56 - 12/70	19	90.0	-.59	7.02	.2866	-1.38	4.22	900
"	1/56 - 12/70	20	90.0	-2.01	6.07	.1737	-1.05	3.87	900
"	1/56 - 12/70	21	90.0	-2.73	5.24	.0979	-.80	3.25	900
"	1/56 - 12/70	22	90.0	-2.87	4.92	.0222	-.75	3.03	900
"	1/56 - 12/70	23	90.0	-2.61	5.27	.0911	-.78	2.97	900
"	1/56 - 12/70	24	90.0	-2.18	5.85	.1895	-.73	3.00	900
"	1/56 - 12/70	25	90.0	-1.36	6.71	.1775	-.77	2.97	900
"	1/56 - 12/70	26	90.0		7.23	.0995		3.15	900
"	1/56 - 12/70	27	90.0						900

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/5 - 12/70
 ALTITUDE (KM) - 0
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.68	2.91	.3508	.52	2.55	.4932	.53	2.55	930	-1.65	2.70	-.1631	.58	2.14
24	-1.58	2.89	.5448	.52	2.54	.4073				-1.65	2.33	-.1048	.57	2.30
36	-1.63	2.90	.1173	.52	2.54	.1324				-1.67	2.86	-.0772	.56	2.45
48	-1.70	2.89	.2710	.51	2.55	.1367				-1.65	2.75	-.0805	.55	2.51
60	-1.70	2.89	-.0568	.51	2.55	.0732				-1.68	2.87	-.0545	.54	2.53
72	-1.72	2.88	.1380	.51	2.56	.0901				-1.66	2.65	-.0563	.54	2.54

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (ICR) - MC KENNEDY
 MONTH OF RECORD -
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) -
 AZIMUTH ANGLE - 90.0
 X = U/IAT T)
 Y = V/IAT T)
 XP = U/IAT T + DT)
 YP = V/IAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP						CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
-.97	5.28	.1271	.34	4.25	930	-.71	.90				
DI	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, Y)	R (XP, Y)	R (YP, X)		
12	-1.03	5.27	.7750	.95	4.25	.6343	.2443	3.44	.0553	.95	3.32
16	-1.05	5.27	.5244	.94	4.24	.5258	.2856	4.15	.0533	.98	3.33
24	-1.12	5.30	.3570	.91	4.24	.3112	.2402	4.85	.1037	1.00	3.95
48	-1.14	5.27	.2233	.90	4.23	.2531	.1878	5.12	.1144	.93	4.07
50	-1.17	5.25	.0931	.89	4.21	.1782	.0977	5.32	.1367	.97	4.17
72	-1.18	5.23	.0650	.90	4.23	.1500	.0495	5.26	.1347	.95	4.20

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 2
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
.44	5.53	.2731	-.17	4.49	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.28	5.53	.7723	-.15	4.47	.5637	.59	3.60	.1000	-.23	3.27
24	.35	5.55	.6514	-.15	4.45	.5422	.50	4.27	.1630	-.20	3.56
36	.23	5.55	.4457	-.17	4.44	.3457	.58	5.06	.2054	-.15	4.11
48	.23	5.60	.3474	-.15	4.44	.2533	.56	5.31	.2225	-.16	4.25
60	.25	5.56	.2158	-.15	4.43	.1584	.53	5.53	.2563	-.15	4.39
72	.23	5.52	.1530	-.12	4.45	.1221	.52	5.60	.2697	-.16	4.44

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	1.65	6.00	.2818	-.31	4.77	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.61	5.97	.8031	-.28	4.73	.2856	.1755	1.67	3.56	.0466	-.44	3.21
24	1.57	5.97	.6747	-.25	4.69	.2834	.0828	1.71	4.38	.1691	-.41	3.86
36	1.53	5.95	.5143	-.25	4.57	.2843	.0319	1.73	5.09	.2123	-.37	4.31
48	1.52	5.92	.4004	-.22	4.67	.2879	.0161	1.72	5.46	.2416	-.35	4.53
60	1.48	5.89	.2941	-.20	4.68	.2822	.0055	1.72	5.71	.2531	-.33	4.65
72	1.44	5.82	.2037	-.18	4.69	.2840	-.0312	1.73	5.84	.2728	-.32	4.71

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12068) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.86	6.48	.8241	-.33	5.21	.2563	-.40	5.27	930	2.85	3.82	.1297	-.54	2.60
24	2.81	6.41	.6615	-.30	5.18					2.91	4.78	.1947	-.52	4.32
36	2.78	6.40	.5147	-.29	5.13					2.96	5.44	.2337	-.48	4.75
48	2.75	6.39	.3944	-.25	5.12					2.97	5.88	.2321	-.46	4.98
60	2.71	6.34	.3017	-.27	5.11					2.99	6.12	.2403	-.42	5.12
72	2.62	6.24	.2211	-.26	5.10					3.00	6.25	.2525	-.40	5.10

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE WENDEY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	MEAN XP	R (XP,Y)	R (YP,X)	R (XP,Y)	R (YP,X)	MEAN YP	S.D. YP
12	24	4.42	6.86	.2637	-.54	5.70	930	4.21	-.88	3.93	4.33	.1237	.1537	.3172	.1537	-.83	3.77
24	36									4.69	4.43	.2080	.0538	.2994	.0538	-.79	4.55
36	48									5.61	4.48	.2394	-.0086	.2578	-.0086	-.71	5.14
48	60									6.12	4.51	.2371	-.0292	.1972	-.0292	-.67	5.40
60	72									6.43	4.54	.2629	-.0519	.1526	-.0519	-.61	5.55
72										6.59	4.58	.2712	-.0912	.1060	-.0912	-.58	5.63

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 6
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	8.06	7.47	2556	-1.84	6.52	930								
24														
36														
48														
60														
72														

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 7
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
12	7.76	8.17	.2787	-.60	7.29	930								
24														
36														
48														
60														
72														

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 8
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	9.3	9.09	.2501	-.44	8.27	930											
24																	
36																	
48																	
60																	
72																	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	8.82	-.62

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 9
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	R (X, YP)	MEAN Y	S.D. Y	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	11.18	10.03	.2948	-.51	9.67	930																	
24																							
36																							
48																							
60																							
72																							

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (X, YP)	MEAN Y	S.D. Y	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	11.08	9.91	.8111	-.44	9.64	.7703																	
24	10.94	9.88	.6909	-.35	9.63	.6144																	
36	10.88	9.85	.5514	-.28	9.56	.4659																	
48	10.78	9.82	.4461	-.24	9.53	.3598																	
60	10.64	9.72	.3301	-.20	9.53	.2688																	
72	10.48	9.64	.2618	-.19	9.54	.2232																	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 10
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	13.08	11.32	.7877	-.42	11.09	.7753	-.53	11.11	930	12.26	-.95	12.59	7.04	.1618	-.93	6.98
24	12.97	11.29	.6578	-.32	11.08	.6322						12.79	8.49	.2332	-.98	8.56
36	12.89	11.25	.5331	-.21	11.04	.4901						12.93	9.66	.2443	-.94	9.64
48	12.73	11.24	.4325	-.15	11.03	.3921						13.08	10.28	.2641	-.86	10.24
60	12.62	11.14	.3099	-.06	11.06	.2858						13.19	10.84	.2731	-.80	10.63
72	12.45	11.05	.2475	-.02	11.08	.2506						13.27	11.04	.2821	-.76	10.75

STATION (12808) - CAPE KENNEDY
MONTH OF RECORD - MAY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (NM) - 11
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT)
YP = V(AT T + DT)

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128681) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT Y + DT)
 YP = V(IAT Y + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP		MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
DT	20.47	14.07	.3592	-2.26	13.67	.30												
12	20.31	14.03	.8622	-2.04	13.64			19.31	7.11	.1438	19.31	7.11		19.31	7.11	.1438	-2.95	7.26
24	20.13	14.02	.7344	-1.93	13.58			19.60	9.34	.2255	19.60	9.34		19.60	9.34	.2255	-2.94	9.59
36	20.00	14.01	.6276	-1.84	13.59			19.82	10.95	.2656	19.82	10.95		19.82	10.95	.2656	-2.88	11.08
48	19.83	14.06	.5240	-1.74	13.58			20.03	11.98	.3017	20.03	11.98		20.03	11.98	.3017	-2.80	12.02
60	19.77	14.04	.4236	-1.60	13.63			20.18	12.73	.3249	20.18	12.73		20.18	12.73	.3249	-2.75	12.58
72	19.62	13.99	.3433	-1.51	13.70			20.34	13.16	.3447	20.34	13.16		20.34	13.16	.3447	-2.68	12.89

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	R (X, YP)	MEAN Y	S.D. Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	20.05	12.37	.3922	-2.79	11.84	930	19.89	12.33	.8592	-2.63	11.76	.3950	19.71	12.33	.7515	-2.53	11.70	.3956	19.34	8.16	.1341	-3.30	6.33
24							19.54	12.33	.6276	-2.45	11.70	.3288	19.34	12.33	.5620	-2.45	11.70	.4051	19.58	9.63	.2514	-3.30	8.27
36							19.34	12.28	.5182	-2.38	11.74	.2836	19.34	12.28	.4171	-2.38	11.74	.4171	19.80	10.55	.3055	-3.24	9.70
48							19.23	12.24	.4107	-2.32	11.74	.2501	19.23	12.24	.3561	-2.32	11.74	.4271	19.93	11.22	.3550	-3.16	10.54
60							19.05	12.16	.3273	-2.27	11.76	.2274	19.05	12.16	.2943	-2.27	11.76	.4332	20.08	11.57	.3761	-3.10	10.99
72																					.3918	-3.03	11.24

c 3

STATION 13588 - CAPE VERDE
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ANALYST (C) - JS
 ALPHA ANGLE - 90.0
 X = V(A) T
 Y = V(A) T
 XP = U(A) T + C
 YP = V(A) T + C

QUADRVARIATE NORMAL STATISTICS OF X,Y,XP,YP													
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP													
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y					
	18.85	10.07	.4204	-3.20	9.42	930	15.87	-3.55					
	MEAN XP	S.D. XP	R (X,XP)	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
OT	16.71	10.03	.8528	.8317	.4222	.4501	.3553	16.13	5.16	.1927	-3.51	5.13	
HR	16.54	10.22	.7493	.7075	.4243	.4255	.2784	16.36	6.06	.2753	-3.61	6.53	
	16.33	9.99	.6376	.5575	.4316	.3333	.2080	16.55	7.72	.3231	-3.55	7.66	
	16.22	9.98	.5357	.4353	.4376	.3445	.1353	16.72	8.43	.3561	-3.48	8.33	
	16.07	9.94	.4331	.3364	.4457	.3222	.0833	16.85	9.99	.3846	-3.40	8.73	
	15.69	9.86	.3556	.2709	.4513	.2694	.0283	16.96	9.30	.3993	-3.33	8.94	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12953) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 16
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. X	N
	12.60	8.24	.3787	-3.11	7.33	930

	GIVEN X	GIVEN Y
	11.89	-3.47

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT YP	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN X	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	12.46	8.21	.8357	-3.24	7.33	.8253	12.12	4.81	.0523	-3.52	1.01
24	12.33	8.20	.7525	-3.00	7.31	.6933	12.30	5.40	.1804	-3.48	3.11
36	12.19	8.19	.6425	-2.95	7.30	.5530	12.46	6.27	.2323	-3.42	5.92
48	12.05	8.17	.5472	-2.94	7.29	.4273	12.58	6.83	.2815	-3.32	6.48
60	11.87	8.12	.4723	-2.90	7.29	.3365	12.70	7.19	.3098	-3.23	6.84
72	11.68	8.04	.4204	-2.87	7.26	.2387	12.82	7.38	.3232	-3.16	7.02

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 17
 ALPHA ANGLE - 90.0
 X = UAT (1)
 Y = VAT (1)
 XP = UAT (1 + DT)
 YP = VAT (1 + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X,Y)	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	7.67	6.71	.7353	-2.85	5.88	.7368	-2.88	5.90	930	7.80	6.74	.3549	7.60	4.08	.0714	-3.09	3.84
24	7.55	6.68	.7487	-2.85	5.86	.6547	-2.88	5.90	930	7.80	6.74	.3549	7.71	4.46	.0717	-3.05	4.23
36	7.43	6.66	.6215	-2.81	5.85	.4837	-2.88	5.90	930	7.80	6.74	.3549	7.82	5.26	.1652	-3.00	4.87
48	7.28	6.84	.5563	-2.82	5.86	.3745	-2.88	5.90	930	7.80	6.74	.3549	7.91	5.58	.2219	-2.93	5.25
60	7.14	6.61	.4752	-2.78	5.84	.2658	-2.88	5.90	930	7.80	6.74	.3549	7.59	5.88	.2736	-2.88	5.92
72	6.99	6.54	.4156	-2.78	5.81	.1881	-2.88	5.90	930	7.80	6.74	.3549	8.07	6.06	.2900	-2.82	5.63

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
7.42	7.42	-3.10								

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAJE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N
12	3.24	5.59	.7169	-2.34	4.54	.6422	-2.35	4.57	930
24	3.11	5.57	.7205	-2.32	4.54	.6273			
36	3.03	5.55	.5786	-2.30	4.55	.4217			
48	2.93	5.54	.5310	-2.28	4.56	.3701			
60	2.82	5.54	.4272	-2.25	4.55	.2435			
72	2.65	5.47	.3778	-2.23	4.54	.2012			

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N
12	3.24	5.59	.7169	-2.34	4.54	.6422	-2.35	4.57	930
24	3.11	5.57	.7205	-2.32	4.54	.6273			
36	3.03	5.55	.5786	-2.30	4.55	.4217			
48	2.93	5.54	.5310	-2.28	4.56	.3701			
60	2.82	5.54	.4272	-2.25	4.55	.2435			
72	2.65	5.47	.3778	-2.23	4.54	.2012			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN Y	S.D. Y	N
12	3.24	5.59	.2677	-2.34	4.54	.2097	-2.35	4.57	930
24	3.11	5.57	.2637	-2.32	4.54	.1571			
36	3.03	5.55	.2642	-2.30	4.55	.1193			
48	2.93	5.54	.2594	-2.28	4.56	.0401			
60	2.82	5.54	.2571	-2.25	4.55	.0265			
72	2.65	5.47	.2685	-2.23	4.54	-.0448			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12958) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 19
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N
12	-1.32	4.84	.6883	-1.51	3.55	.1905	-1.61	3.56	930
24	-1.41	4.82	.7182	-1.60	3.57				
36	-1.51	4.60	.5941	-1.60	3.59				
48	-1.60	4.57	.5455	-1.59	3.58				
60	-1.70	4.57	.4294	-1.58	3.58				
72	-1.86	4.48	.4125	-1.56	3.56				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.20	3.39	-.0148	-1.60	3.21
24	-1.14	3.26	-.0410	-1.59	2.90
36	-.09	3.81	.0195	-1.57	3.30
48	-.05	3.91	.0613	-1.55	3.20
60	-.04	4.23	.0977	-1.54	3.42
72	.05	4.21	.1255	-1.52	3.44

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-2.72	4.23	.6512	-1.22	2.90	.1699	-1.22	2.90	.1532	.1651	.1180	.0845	-2.55	3.25	.1289	-1.22	2.85
24	-2.81	4.22	.6952	-1.21	2.91		.4429	.1887	.1924	.1887	.1924	.0630	-2.47	3.07	.0948	-1.22	2.58
36	-2.90	4.21	.5616	-1.20	2.91		.0433	.1608	.1415	.1608	.1415	.0090	-2.45	3.53	.1131	-1.20	2.87
48	-3.00	4.21	.5377	-1.20	2.91		.2417	.1683	.1750	.1683	.1750	-.0175	-2.40	3.58	.1238	-1.19	2.79
60	-3.13	4.20	.4257	-1.21	2.89		-.0537	.1650	.1083	.1650	.1083	-.0571	-2.39	3.83	.1279	-1.18	2.87
72	-3.25	4.18	.4056	-1.20	2.89		.0648	.1677	.1224	.1677	.1224	-.0460	-2.34	3.88	.1396	-1.17	2.88

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	-2.58	-1.25

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KEMEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 21
 ALPHA ANGLE - 90.0

X = UVIAT T
 Y = VIAT T

XP = UVIAT T + DT
 YP = VIAT T + DT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP											
QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP							CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP				
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y		
	-4.49	4.11	.0413	-.75	2.58	930		-4.41	-.74		
	MEAN XP	S.D. XP	R (X, XP)	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP
12	-4.59	4.06	.6132	.0752	.0312	.0189	.0266	-4.38	3.23	.0306	-.75
24	-4.70	4.07	.5765	-.76	.0315	.0859	.0051	-4.30	3.02	-.0173	-.73
36	-4.78	4.06	.5078	-.76	.0290	.0413	.0685	-4.30	3.53	.0258	-.74
48	-4.80	4.09	.5456	-.75	.0235	.0233	.0301	-4.23	3.44	-.0124	-.72
60	-4.99	4.07	.4194	-.75	.0265	.0473	.0311	-4.25	3.73	.0261	-.73
72	-5.13	4.06	.4235	-.74	.0315	.0571	.0094	-4.19	3.72	.0189	-.72

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(AT)
 Y = V(AT)

XP = U(AT + DT)
 YP = V(AT + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N
12	-5.83	4.18	.6486	-.68	2.66	.0557	-.65	2.66	930
24	-5.93	4.16	.6843	-.65	2.68	.3093			
36	-6.03	4.16	.5512	-.70	2.69	-.0637			
48	-6.14	4.17	.5285	-.68	2.69	.0421			
60	-6.22	4.15	.4791	-.71	2.67	-.1348			
72	-6.32	4.15	.4395	-.67	2.67	.0166			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
GIVEN X	-5.57	3.18	-.0602	-.65	2.65
GIVEN Y	-5.49	3.07	-.0576	-.65	2.53
	-5.47	3.49	-.0527	-.65	2.66
	-5.43	3.57	-.0326	-.63	2.65
	-5.43	3.75	-.0853	-.63	2.63
	-5.40	3.78	-.0944	-.62	2.66

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/73
 ALTITUDE (M) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)
12	-6.86	4.20	.6911	-.50	2.66	-.0367	-.48	2.65	930	-6.39	3.03	-.0117	-.48	2.64	.0524
24	-6.74	4.18	.6973	-.48	2.67					-6.33	3.02	-.0275	-.49	2.53	-.0275
36	-6.86	4.17	.5935	-.50	2.69					-6.29	3.38	-.0481	-.49	2.62	.0280
48	-6.97	4.16	.5834	-.50	2.70					-6.23	3.42	-.0571	-.50	2.64	-.0322
60	-7.09	4.13	.5007	-.52	2.71					-6.21	3.65	-.0592	-.50	2.60	-.0188
72	-7.18	4.14	.4629	-.48	2.71					-6.20	3.74	-.0674	-.49	2.65	-.0506

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION '128581 - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (NM) - 24
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP								
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
	-7.05	4.56	.0248	-1.48	2.77	930	-6.84	-.45					
12	-7.16	4.50	.7018	.0539	.0250				.0457	-6.82	3.24	-.48	2.76
24	-7.28	4.48	.7126	.2363	.0244				.0422	-6.74	3.19	-.47	2.84
36	-7.38	4.43	.5939	-.0831	.0232				.0650	-6.72	3.66	-.43	2.78
48	-7.47	4.42	.5624	.0701	.0224				.0840	-6.68	3.78	-.51	2.75
60	-7.59	4.42	.4794	-.2039	.0252				.0824	-6.68	4.01	-.53	2.70
72	-7.66	4.37	.4745	.0113	.0195				.0568	-6.84	4.01	-.51	2.76

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	-7.20	5.02	.0860	-.63	2.82	930	-.63	2.82	.0860	-.63	2.82
24	-7.32	4.97	.7234	-.62	2.81		-.62	2.81	.7234	-.62	2.81
36	-7.43	4.94	.7273	-.63	2.82		-.63	2.82	.7273	-.63	2.82
48	-7.53	4.90	.6218	-.62	2.84		-.62	2.84	.6218	-.62	2.84
60	-7.64	4.87	.5762	-.63	2.83		-.63	2.83	.5762	-.63	2.83
72	-7.74	4.84	.5132	-.63	2.83		-.63	2.83	.5132	-.63	2.83
84	-7.85	4.79	.4727	-.66	2.81		-.66	2.81	.4727	-.66	2.81

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN XP	S.D. YP
-7.11	-.61	3.42	.0142	-7.04	2.76
		3.43	.0274	-6.96	2.72
		3.92	.0589	-6.93	2.81
		4.19	.0570	-6.88	2.81
		4.31	.0538	-6.86	2.78
		4.42	.0427	-6.83	2.81

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 11299A1 - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE (FT) - 25
 ALPHA ANGLE - 90.0

X = U(1, 2)
 Y = V(1, 2)

XP = U(1, 2) + DT
 YP = V(1, 2) + DT

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP						
	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
-7.18	-7.18	5.44	.0224	-6.82	2.87	930	-7.15	-7.15	-7.15	-7.15	-7.15
12	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
24	-7.31	5.41	.7890	-6.98	2.88	.0233	-7.05	3.31	-.0143	-6.82	2.73
36	-7.43	5.39	.7528	-6.98	2.88	.0218	-6.97	3.55	.0132	-6.82	2.79
48	-7.54	5.36	.6775	-6.98	2.85	.0217	-6.91	3.87	.0573	-6.83	2.87
60	-7.64	5.34	.6125	-6.98	2.83	.0215	-6.87	4.27	.0880	-6.83	2.87
72	-7.73	5.31	.5637	-6.98	2.84	.0213	-6.84	4.49	.0632	-6.83	2.85
84	-7.87	5.28	.5058	-6.98	2.82	.0213	-6.80	4.89	.0300	-6.82	2.87

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 27
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP								
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-6.96	5.95	.0042	-.64	2.95	930	-6.87	-.64					
12	-7.06	5.52	.8226	-.62	2.95				-6.80	3.36	-.0080	-.65	2.85
24	-7.18	5.89	.7803	-.61	2.94				-6.72	3.71	.0306	-.66	2.85
36	-7.30	5.87	.6981	-.62	2.94				-6.66	4.23	.0834	-.66	2.94
48	-7.40	5.85	.6562	-.63	2.93				-6.60	4.48	.0795	-.67	2.94
60	-7.50	5.83	.5877	-.65	2.92				-6.58	4.82	.0687	-.67	2.93
72	-7.62	5.82	.5359	-.66	2.90				-6.55	5.03	.0560	-.67	2.94

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12888) - CAPE KENNEDY

X = U/IAT T)
Y = V/IAT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
3	1/56 - 12/70	0	90.0	-1.67	2.89	-.0857	.53	2.55	930
3	1/56 - 12/70	1	90.0	-.97	5.28	.1271	.54	4.25	930
3	1/56 - 12/70	2	90.0	.44	5.68	.2731	-.17	4.49	930
3	1/56 - 12/70	3	90.0	1.65	6.00	.2818	-.31	4.77	930
3	1/56 - 12/70	4	90.0	2.91	6.50	.2669	-.40	5.27	930
3	1/56 - 12/70	5	90.0	4.42	6.85	.2637	-.54	5.70	930
3	1/56 - 12/70	6	90.0	6.06	7.47	.2556	-.64	6.52	930
3	1/56 - 12/70	7	90.0	7.76	8.17	.2787	-.60	7.29	930
3	1/56 - 12/70	8	90.0	9.43	9.09	.2551	-.44	8.27	930
3	1/56 - 12/70	9	90.0	11.16	10.03	.2548	-.51	9.67	930
3	1/56 - 12/70	10	90.0	13.24	11.44	.2736	-.53	11.11	930
3	1/56 - 12/70	11	90.0	15.79	12.68	.3133	-.66	12.65	930
3	1/56 - 12/70	12	90.0	18.45	13.93	.3365	-.79	13.66	930
3	1/56 - 12/70	13	90.0	20.47	14.07	.3592	-1.11	13.67	930
3	1/56 - 12/70	14	90.0	20.05	12.37	.3922	-2.79	11.84	930
3	1/56 - 12/70	15	90.0	16.85	10.07	.4204	-3.20	9.42	930
3	1/56 - 12/70	16	90.0	12.60	8.24	.5767	-3.11	7.39	930
3	1/56 - 12/70	17	90.0	7.80	6.74	.5949	-2.88	5.90	930
3	1/56 - 12/70	18	90.0	3.34	5.66	.2733	-2.35	4.97	930
3	1/56 - 12/70	19	90.0	-.23	4.68	.1905	-1.61	3.56	930
3	1/56 - 12/70	20	90.0	-2.64	4.28	.1699	-1.22	2.90	930
3	1/56 - 12/70	21	90.0	-4.49	4.11	.0413	-.75	2.59	930
3	1/56 - 12/70	22	90.0	-5.71	4.20	.0480	-.65	2.66	930
3	1/56 - 12/70	23	90.0	-6.54	4.22	-.0367	-.48	2.65	930
3	1/56 - 12/70	24	90.0	-7.05	4.56	.0548	-.48	2.77	930
3	1/56 - 12/70	25	90.0	-7.20	5.02	.0660	-.63	2.82	930
3	1/56 - 12/70	26	90.0	-7.18	5.44	.0824	-.82	2.87	930
3	1/56 - 12/70	27	90.0	-6.96	5.95	.0942	-.64	2.95	930

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 0
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	R (X,XP)	R (Y,YP)	R (XP,YP)	GIVEN X	GIVEN Y	MEAN XP	MEAN YP	S.D. XP	S.D. YP
12	24	-1.08	2.68	.0014	.93	2.38	900	.93	2.38	.0014	.93	2.38	.0014	.0014	.0014	-1.10	.99	-1.08	.95	2.63	2.15
24	36	-1.05	2.66	.2249	.92	2.38		.92	2.38	.2249	.92	2.38	.0016	.0016	.0016			-1.08	.95	2.63	2.15
36	48	-1.04	2.66	.4932	.95	2.35		.95	2.35	.4932	.95	2.35	-.0070	-.0070	-.0070			-1.12	.95	2.63	2.15
48	60	-1.03	2.66	.6288	.97	2.34		.97	2.34	.6288	.97	2.34	-.0195	-.0195	-.0195			-1.09	.92	2.63	2.26
60	72	-1.03	2.66	.7328	.99	2.32		.99	2.32	.7328	.99	2.32	-.0231	-.0231	-.0231			-1.12	.91	2.66	2.33
72		-1.03	2.66	.8119	.99	2.31		.99	2.31	.8119	.99	2.31	-.0231	-.0231	-.0231			-1.07	.92	2.66	2.34
		-1.03	2.66	.8667	1.01	2.31		1.01	2.31	.8667	1.01	2.31	-.0209	-.0209	-.0209			-1.12	.92	2.59	2.37

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112858) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMH) - 1
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.14	5.12	.7015	1.66	.1921	1.65	3.86	900	.15	3.60	.1774	1.76	2.86
24	.19	5.11	.6034	1.68					.11	3.97	.1166	1.72	3.33
36	.24	5.07	.3654	1.72					.09	4.70	.1478	1.66	3.65
48	.29	5.07	.2566	1.73					.08	4.86	.1410	1.64	3.72
60	.34	5.06	.1435	1.75					.09	5.05	.1776	1.64	3.82
72	.38	5.05	.1428	1.75					.09	5.07	.1757	1.63	3.81

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
.22	1.83

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 AZIMUTH ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (XP,Y)	R (YP,X)	MEAN YP	S.D. YP
12	1.28	5.01	.7373	.96	4.01	.6148	.92	4.00	900	.92	4.00	.92	4.00	.2734	.0501	1.32	3.38
24	1.29	5.01	.6182	.97	4.01	.4717						.4717	.1844	.2710	-.0351	1.29	3.88
36	1.31	4.99	.4248	.98	4.01	.2093						.2093	.1817	.2566	-.0432	1.27	4.52
48	1.31	5.00	.3222	.99	4.01	.1420						.1420	.1782	.2152	-.0674	1.26	4.73
60	1.33	4.98	.2206	.98	4.00	.0318						.0318	.1734	.1887	-.0623	1.26	4.83
72	1.34	4.98	.1597	.96	3.97	.0649						.0649	.1714	.1642	-.0724	1.25	4.95

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	1.38	1.17

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, YP, YP

STATION 12958 - CAPE KEMEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/75
 ALTITUDE (M) - 3
 ALPHA ANGLE - 90.0

X = J(A, T)
 Y = J(A, T)
 YP = J(A, T, DT)
 YP = J(A, T, DT)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, YP, YP

DT	QUADRI-VARIATE NORMAL STATISTICS OF X, Y, YP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP			
	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP
12	1.87	5.05	.1333	.75	4.11	900	1.26	.95
24								
36								
48								
60								
72								

DT	QUADRI-VARIATE NORMAL STATISTICS OF X, Y, YP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP			
	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP
12	1.87	5.05	.1333	.75	4.11	900	1.26	.95
24								
36								
48								
60								
72								

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	2.22	5.29	.7908	.57	4.28	.6304	.59	4.25	900	2.38	.76	2.38	3.20	.0167	.72	3.25
24	2.19	5.31	.6727	.57	4.28	.4870						2.36	3.81	.0867	.70	3.65
36	2.15	5.33	.5069	.56	4.28	.2448						2.36	4.49	.0592	.67	4.03
48	2.12	5.33	.4086	.56	4.29	.1699						2.35	4.77	.0792	.66	4.11
60	2.10	5.33	.2867	.57	4.30	.0672						2.33	5.03	.0949	.64	4.17
72	2.12	5.33	.1995	.54	4.32	.0748						2.30	5.14	.1174	.63	4.19

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (YP, X)
12	2.51	5.58	.7852	.25	4.42	.1587	.25	4.41	900	2.56	5.57	.25	.25	4.42	.0334
24	2.48	5.60	.6578	.26	4.42										
36	2.43	5.61	.4993	.26	4.40										
48	2.39	5.63	.3325	.28	4.42										
60	2.37	5.63	.2951	.29	4.42										
72	2.37	5.62	.2318	.27	4.44										

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (YP, X)
12	2.56	5.57	.25	.25	4.41	.0334
24	2.48	5.60	.26	.26	4.40	.0334
36	2.43	5.61	.26	.26	4.42	.0334
48	2.39	5.63	.28	.28	4.42	.0334
60	2.37	5.63	.29	.29	4.42	.0334
72	2.37	5.62	.27	.27	4.44	.0334

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 6
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT)
YP = V(AT T + DT)

[illegible]

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12883) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 8
 ALPHA ANGLE - 90.0

X = U1AT T)
 Y = VIAT T)

XP = U1AT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	S.D. X	MEAN Y	S.D. Y	R (X, Y)	N	MEAN XP	S.D. XP	R (XP, Y)	S.D. YP	MEAN YP	S.D. YP	R (XP, XP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	4.15	7.29	.7972	7.32	-0.29	5.77	.2449	900	4.04	4.40	.1089	4.00	-0.28	4.00	.1089	3.88	-0.25	-0.28	4.00
24	4.07	7.31	.6835						4.13	5.34	.1357	4.66	-0.29	4.66	.1357			-0.29	4.66
36	3.95	7.33	.5435						4.22	6.12	.1563	5.11	-0.27	5.11	.1563			-0.27	5.11
48	3.82	7.32	.4731						4.29	6.44	.1574	5.35	-0.25	5.35	.1574			-0.25	5.35
60	3.71	7.31	.3539						4.32	6.84	.1658	5.52	-0.24	5.52	.1658			-0.24	5.52
72	3.60	7.28	.3130						4.35	6.95	.1976	5.61	-0.23	5.61	.1976			-0.23	5.61

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

STATISTICS OF X, Y, XP, YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 9
 ALPHA ANGLE - 90.0

X = U(1, T)
 Y = V(1, T)

XP = U(1, T) + DT
 YP = V(1, T) + DT

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	5.20	8.50	.2755	-.29	6.84	990	4.83	5.05	.1604	-.31	9.68
DT											
12	5.06	8.47	.827	73.4	.2761	.229	4.83	5.05	.1604	-.31	9.68
24	4.93	8.50	.6326	58.9	.2737	.2782	5.03	4.13	.1742	-.30	8.47
36	4.77	8.51	.5766	42.6	.2769	.2593	5.14	6.93	.1951	-.29	8.31
48	4.65	8.51	.4981	30.1	.2793	.2532	5.27	7.37	.1957	-.25	8.52
60	4.51	8.48	.3963	25.3	.2815	.2503	5.27	7.94	.2228	-.24	8.62
72	4.38	8.47	.3449	21.38	.2817	.1852	5.31	7.98	.2307	-.23	8.62

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

① STATION (12808) CAPE MENVEDY
 MONTH OF RECORD JUNE
 PERIOD OF RECORD 1/56 - 12/70
 ALTITUDE (M) 10
 ALPHA ANGLE 50.0

X = UIAT T
 Y = VIAT T
 XP = UIAT T - DT
 YP = VIAT T - DT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)
12	5.94	9.81	.2893	-45	8.26	300									
24															
36															
48															
60															
72															

QUADRIARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 128623 - CAPE KENNEDY
 MONTH OF RECORD - JUL
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 15
 ALPH ANGLE - 95.0

X = 0.147
 Y = 0.147

XP = 0.147
 YP = 0.147

QUADRIARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	P (X,Y)	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	P (XP,Y)
5.75	11.13	3.34		-1.74	9.53							
12												
24												
36												
48												
60												
72												

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP	P (XP,YP)
GIVEN X						
5.75	6.22	6.02		-1.88		
12						
24						
36						
48						
60						
72						

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DATA ON FILED - CASE FILED
 DATE OF RECORD - 1/15 - 12/70
 PERIOD OF RECORD - 1/15 - 12/70
 NUMBER OF CASES - 12
 ALPHA ANGLE - 50.0

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HF	MEAN		S.D.	R	MEAN		S.D.	N	GIVEN		S.D.	R	MEAN		S.D.	R	MEAN	
		XP	Y			XP	Y			X	Y			XP	Y			XP	Y
12	24	7.63	12.53	12.53	.87-1	-1.70	10.83	10.83	.2966	7.44	6.94	7.44	.2922	7.44	6.94	7.44	.2922	-1.68	6.79
24	36	7.51	12.43	12.43	.7533	-1.71	10.78	10.78	.2905	7.62	8.27	7.62	.2534	7.62	8.27	7.62	.2534	-1.67	8.09
36	48	7.32	12.38	12.38	.6239	-1.73	10.70	10.70	.2484	7.80	9.84	7.80	.2088	7.80	9.84	7.80	.2088	-1.64	9.31
48	60	7.06	12.34	12.34	.5547	-1.82	10.60	10.60	.2396	7.95	10.46	7.95	.2134	7.95	10.46	7.95	.2134	-1.58	9.68
60	72	6.78	12.26	12.26	.4708	-1.93	10.43	10.43	.1898	8.08	11.08	8.08	.1977	8.08	11.08	8.08	.1977	-1.52	10.13
72		6.94	12.29	12.29	.4272	-2.04	10.37	10.37	.2093	8.17	11.33	8.17	.2063	8.17	11.33	8.17	.2063	-1.45	10.24

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1288) - CAPE KENEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (M) - 14
 ALPHA ANGLE - 90.0

X = UAT (°)
 Y = VIAT (°)

XP = UAT (° DT)
 YP = VIAT (° DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 7.79
 S.D. X 12.44
 P (X, Y) .3282
 MEAN Y -4.21
 S.D. Y 9.48
 N 300

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X 7.01
 GIVEN Y -4.33

MEAN XP 7.52
 S.D. XP 12.43
 MEAN YP -4.32
 S.D. YP 9.41
 P (XP, YP) .3254
 MEAN X 7.79
 S.D. X 12.44
 P (X, Y) .3282
 MEAN Y -4.21
 S.D. Y 9.48
 N 300

DT 12
 24
 36
 48
 60
 72

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12258) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1956 - 12/70
 ALTITUDE (MM) - 16
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U'(1AT T + DT)
 YP = V'(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	24	1.72	7.50									
36	48	1.31	7.47									
48	50	1.05	7.44									
50	72	.86	7.41									
72		.63	7.35									
		1.95	7.55	.2393	-4.20	5.28	900					

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN XP	S.D. YP	MEAN YP	S.D. YP
1.42	-4.31	4.08	.0430	1.69	4.46	-4.31	3.83
		4.46	.1091	1.88	5.32	-4.29	4.02
		5.32	.1327	2.04	5.71	-4.24	4.55
		5.71	.1555	2.20	6.16	-4.21	4.76
		6.16	.1734	2.29	6.40	-4.16	4.96
		6.40	.1904	2.39		-4.13	5.06

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112852 - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALPHA OF 10% - 17
 ALPHA ANGLE - 90.0

X = U(1, 1)
 Y = V(1, 1)

XP = U(1, 1) + 0.57
 YP = V(1, 1) + 0.57

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	P (X, Y)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
1	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
2	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
3	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
4	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
5	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
6	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
7	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
8	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
9	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11
10	-1.15	5.58	0.157	-3.22	4.11	900	-1.15	5.58	0.157	-3.22	4.11	-1.15	5.58	0.157	-3.22	4.11	-1.15	-3.22	4.11

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
1	-1.15	5.58	0.157	-3.22	4.11
2	-1.15	5.58	0.157	-3.22	4.11
3	-1.15	5.58	0.157	-3.22	4.11
4	-1.15	5.58	0.157	-3.22	4.11
5	-1.15	5.58	0.157	-3.22	4.11
6	-1.15	5.58	0.157	-3.22	4.11
7	-1.15	5.58	0.157	-3.22	4.11
8	-1.15	5.58	0.157	-3.22	4.11
9	-1.15	5.58	0.157	-3.22	4.11
10	-1.15	5.58	0.157	-3.22	4.11

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAVE KENNEDY X = U(AT T)
 MONTH OF RECORD - JUNE Y = V(AT T)
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	R (XP, Y)	R (XP, YP)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	-4.21	4.44	.1154	-2.05	3.13	900	-4.24	3.40	-.0046	-2.10	3.03	.1485	.1519	.1059	-4.24	3.40	-.0046	-2.10	3.03
24												.0707	.2023	.1030	-4.14	3.23	-.0378	-2.11	2.84
36												.0511	.1575	.1024	-4.05	3.71	.0382	-2.05	3.11
48												.0183	.1231	.0578	-3.99	3.73	.0703	-2.07	3.08
60												-.0216	.0559	.0232	-3.97	3.99	.1003	-2.05	3.17
72												-.0333	.0789	.0312	-3.94	4.02	.0393	-2.04	3.15

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 19
 AZIMUTH ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	R (YP,X)	MEAN YP	S.D. YP
12	-6.68	3.78	.134	-1.22	2.75	900	-6.64	3.15	.1259	.0323	-1.23	2.73
24							-6.25	2.90	-.0003	.0267	-1.23	2.52
36							-6.22	3.32	.1322	.0247	-1.22	2.75
48							-6.48	3.32	.0325	.0732	-1.23	2.69
60							-6.48	3.54	.1475	-.0375	-1.23	2.75
72							-6.46	3.54	.1301	.0194	-1.23	2.70

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
	-6.73	-1.26	-6.64	3.15	.1259	-1.23	2.73

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 21
 ALPHA ANGLE - 90.0

X = U/AT T)
 Y = V/AT T)

XP = U/AT T + DT)
 YP = V/AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN				S.D.				R				MEAN				S.D.				R				MEAN				S.D.			
	XP	Y	X	YP	XP	Y	X	YP	XP, YP	Y, XP	X, YP	YP, X	XP, YP	Y, XP	X, YP	YP, X	XP, YP	Y, XP	X, YP	YP, X	XP, YP	Y, XP	X, YP	YP, X	XP, YP	Y, XP	X, YP	YP, X				
12	-10.10	-10.29	-10.10	-10.29	3.84	3.90	3.84	3.90	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
24	-10.37	-10.37	-10.37	-10.37	3.90	3.90	3.90	3.90	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
36	-10.49	-10.49	-10.49	-10.49	3.95	3.95	3.95	3.95	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
48	-10.55	-10.55	-10.55	-10.55	3.95	3.95	3.95	3.95	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
60	-10.63	-10.63	-10.63	-10.63	3.95	3.95	3.95	3.95	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
72	-10.63	-10.63	-10.63	-10.63	3.95	3.95	3.95	3.95	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN				S.D.				R				MEAN				S.D.				R				MEAN				S.D.			
	XP	Y	X	YP	XP	Y	X	YP	XP, YP	Y, XP	X, YP	YP, X	XP, YP	Y, XP	X, YP	YP, X	XP, YP	Y, XP	X, YP	YP, X	XP, YP	Y, XP	X, YP	YP, X	XP, YP	Y, XP	X, YP	YP, X				
12	-10.10	-10.29	-10.10	-10.29	3.84	3.90	3.84	3.90	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
24	-10.37	-10.37	-10.37	-10.37	3.90	3.90	3.90	3.90	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
36	-10.49	-10.49	-10.49	-10.49	3.95	3.95	3.95	3.95	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
48	-10.55	-10.55	-10.55	-10.55	3.95	3.95	3.95	3.95	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
60	-10.63	-10.63	-10.63	-10.63	3.95	3.95	3.95	3.95	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				
72	-10.63	-10.63	-10.63	-10.63	3.95	3.95	3.95	3.95	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58	-.58				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMH) - 23
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (X, XP)	S.D. XP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (X, YP)	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	-12.57	3.81	-0.0813	-0.43	2.96	900	-12.50	3.32	-0.0407	-0.43	2.95	-0.43	3.82	-12.67	3.82	-0.0702	-0.43	2.95	-0.1538	3.43	-0.0945	-0.44	2.92
24																							
36																							
48																							
60																							
72																							

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, X)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (X, YP)	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	-12.57	3.81	-0.0813	-0.43	2.96	900	-12.50	3.32	0.0603	-12.50	3.32	-0.0945	-12.50	3.32	-0.0945	-0.44	2.92	-0.1538	3.43	-0.0945	-0.44	2.92
24																						
36																						
48																						
60																						
72																						

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112558) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/55 - 12/79
 ALTITUDE (MM) - 24
 ALPHA ANGLE - 90.0

X = UAT
 Y = VIAT
 XP = UAT
 YP = VIAT

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-43.31	4.11	-0.422	-1.42	2.71	900	-13.23	3.59	-0.0228	-13.16	3.32	-0.0909	-18.27	9.42	-13.23	3.59	-0.0228	-13.16	3.32
24																			
36																			
48																			
60																			
72																			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128681 - CAPE KEMEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (M) - 25
 ALPHA ANGLE - 90.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-13.98	4.45	-0.665	-1.57	2.64	900	-13.97	3.85	-0.793	-1.57	2.62	-0.61	-13.97	3.85	-0.793	-1.57	2.62	-0.61	-1.57	2.62
24																				
36																				
48																				
60																				
72																				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-14.11	4.47	-0.53	-1.57	2.63	-0.53	-14.11	4.47	-0.53	-1.57	2.63
24	-14.22	4.46	-0.50	-1.57	2.63	-0.50	-14.22	4.46	-0.50	-1.57	2.63
36	-14.34	4.45	-0.52	-1.57	2.63	-0.52	-14.34	4.45	-0.52	-1.57	2.63
48	-14.45	4.43	-0.51	-1.57	2.63	-0.51	-14.45	4.43	-0.51	-1.57	2.63
60	-14.57	4.43	-0.52	-1.57	2.63	-0.52	-14.57	4.43	-0.52	-1.57	2.63
72	-14.68	4.43	-0.53	-1.57	2.63	-0.53	-14.68	4.43	-0.53	-1.57	2.63

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112859) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 26
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-14.34	4.69	-.0763	-.63	2.82	900	-.72	2.82	-.0871	-.0676	2.82	.0676	-.0871	-.0142	-14.25	3.82	-.0867	-.69	2.81
24							-.70	2.82	-.0910	.0650	2.83	.0650	-.0910	-.0057	-14.20	3.77	-.0890	-.69	2.81
36							-.70	2.83	-.0917	.0022	2.84	.0022	-.0917	.0611	-14.16	4.05	-.0931	-.69	2.82
48							-.71	2.84	-.0975	.0459	2.84	.0459	-.0975	-.0020	-14.11	4.11	-.0976	-.71	2.81
60							-.74	2.83	-.1006	-.0238	2.84	-.0238	-.1006	-.0022	-14.07	4.23	-.0625	-.71	2.81
72							-.74	2.84	-.1030	.0297	2.84	.0297	-.1030	-.0278	-14.03	4.25	-.0619	-.71	2.81

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128881 - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 27
 ALPHA ANGLE - 90.0

X = U(1,1)
 Y = V(1,1)
 XP = U(1,2)
 YP = V(1,2)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. Y	P (X,Y)	MEAN Y	S.D. XP	P (Y,XP)	MEAN XP	S.D. YP	P (XP,YP)	MEAN YP	S.D. VP	P (VP,V)	MEAN VP	S.D. V	P (V,V)
12	-14.65	5.04	-0.087	-0.85	2.88	0.00									
24															
36															
48															
60															
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y	P (XP,YP)	MEAN XP	S.D. YP	P (YP,V)	MEAN VP	S.D. V	P (V,V)
	-14.58	-0.83							
12									
24									
36									
48									
60									
72									

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QUADRIARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, YP, YD

STATION 1129681 - CAPE WENEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE IN FT - 0
 ALPHA ANGLE - 90.0

X = U(AY, Y)
 Y = V(AY, Y)

YP = U(AY, Y, D)
 YD = V(AY, Y, D)

QUADRIARIATE NORMAL STATISTICS OF X, Y, YP, YD

	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	P (YP, Y)	MEAN YD	S.D. YD	P (YP, YD)	MEAN YD	S.D. YD
12	-1.50	2.29	-1.1375	1.48	1.84	930	-1.62	2.21	-1.2222	-1.53	2.20	-1.2222	-1.53	2.20
24														
36														
48														
60														
72														

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YD

	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	P (YP, Y)	MEAN YD	S.D. YD	P (YP, YD)	MEAN YD	S.D. YD
12	-1.50	2.29	-1.1375	1.48	1.84	930	-1.62	2.21	-1.2222	-1.53	2.20	-1.2222	-1.53	2.20
24														
36														
48														
60														
72														

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128531 - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) -
 ALPHA ANGLE - 50.0

X = UAT (°)
 Y = UAT (°)
 XP = UAT (° + DT)
 YP = UAT (° + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	P (XP, Y)	P (YP, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.86	4.40	.7755	2.75	3.28	.5630	2.73	3.31	930	-.0032	-.0248	.75	2.76	.0355	2.72	2.72
24	.91	4.41	.6328	2.76	3.27	.4757				-.0050	-.0270	.73	3.15	.0729	2.77	2.91
36	.94	4.42	.4902	2.76	3.27	.2407				-.0066	-.0779	.72	3.01	.0500	2.75	3.20
48	.96	4.42	.3539	2.77	3.27	.1523				.0000	-.1812	.73	4.06	.0451	2.75	3.25
60	.98	4.43	.2201	2.77	3.27	.0579				.0000	-.0935	.75	4.27	.0131	2.74	3.29
72	.94	4.43	.1940	2.77	3.27	.0634				.0137	-.0693	.75	4.34	.0017	2.74	3.29

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12069) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ACTING OF RECORD - P
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (Y, YP)	P (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	1.24	4.49	.7456	1.86	3.43	.0381	1.85	3.45	930	.5789	.1021	.0489	1.23	2.96	1.33	1.35	1.91	2.81
24	1.29	4.49	.6922	1.88	3.42					.4732	.1035	-.0153	1.23	3.31			1.88	3.04
36	1.32	4.49	.6747	1.90	3.42					.2357	.1031	-.0079	1.23	3.91			1.86	3.35
48	1.35	4.49	.5674	1.93	3.42					.1899	.1095	-.0122	1.19	4.13			1.95	3.38
60	1.37	4.50	.2360	1.94	3.42					.0775	.1108	-.0042	1.18	4.32			1.85	3.44
72	1.37	4.49	.1728	1.96	3.43					.0539	.1148	.0112	1.18	4.33			1.84	3.44

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.23	2.96	.0505	1.91	2.81
24	1.23	3.31	.1197	1.88	3.04
36	1.23	3.91	.1285	1.86	3.35
48	1.19	4.13	.1365	1.95	3.38
60	1.18	4.32	.1137	1.85	3.44
72	1.18	4.33	.1035	1.84	3.44

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	1.35	4.59	.1239	1.62	3.51	930	1.48	2.85	.0837	1.63	2.67
24											
36											
48											
60											
72											

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.41	4.62	.7830	1.65	3.50
24	1.47	4.62	.6676	1.67	3.50
36	1.51	4.62	.4901	1.70	3.49
48	1.55	4.61	.3889	1.72	3.49
60	1.55	4.61	.2831	1.74	3.47
72	1.55	4.60	.2080	1.77	3.46

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (DEGS) - CAPE MENES
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = UAT
 Y = VIAT

XP = UAT + DT
 YP = VIAT + DT

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	1.36	4.79	.1173	1.45	3.77	930	1.47	2.93	.0590	1.42	2.84	.0590	1.47	2.93	.0590	1.42	2.84	.0590	1.47	2.93	.0590	1.42	2.84
24																							
36																							
48																							
60																							
72																							

QUADRAVAR - AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12258) - CAPE KEMECY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 5
 ALPHA ANGLE - 50.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	S.D. X	MEAN Y	R (X,Y)	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	S.D. YP	MEAN YP	R (XP,YP)	S.D. Y	N
12	1.22	4.89	.7782	1.13	1.10	.0779	3.86	930	1.26	3.04	.0613	2.99	1.02	.0613	3.04	930
24	1.26	4.85	.6694	1.12	1.10	.0779	3.86	930	1.22	3.59	.0793	3.30	1.03	.0793	3.59	930
36	1.30	4.84	.4921	1.16	1.10	.0779	3.86	930	1.20	4.21	.0896	3.68	1.05	.0896	4.21	930
48	1.32	4.82	.3977	1.15	1.10	.0779	3.86	930	1.18	4.46	.0935	3.79	1.07	.0935	4.46	930
60	1.33	4.82	.2722	1.15	1.10	.0779	3.86	930	1.16	4.68	.0905	3.85	1.09	.0905	4.68	930
72	1.32	4.84	.2107	1.17	1.10	.0779	3.86	930	1.16	4.75	.0835	3.85	1.09	.0835	4.75	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 1.33

GIVEN Y
 .99

DIAGONAL: BIVARIATE NORMAL STATISTICS OF X, Y, YP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP			
MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN X	S.D. Y
.8:	4.33	.0539	.75	4.14	930	.85	.8:

DIAGONAL: BIVARIATE NORMAL STATISTICS OF X, Y, YP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP			
MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN X	S.D. Y
.8:	4.33	.0539	.75	4.14	930	.85	.8:

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KPH) - 7
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	.28	5.01	.0897	.37	4.35	930	.37	4.35	.22	.37	.22	.37	.22	.22
24	.31	5.00	.7573	.36	4.36		.36	4.36	.0874	.36	4.36	.0874	.36	4.36
36	.34	4.98	.6334	.35	4.33		.35	4.33	.0864	.35	4.33	.0864	.35	4.33
48	.37	4.97	.4732	.34	4.34		.34	4.34	.0918	.34	4.34	.0918	.34	4.34
60	.36	4.99	.3528	.34	4.31		.34	4.31	.0889	.34	4.31	.0889	.34	4.31
72	.35	5.01	.2875	.31	4.29		.31	4.29	.0939	.31	4.29	.0939	.31	4.29

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112953 - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KHI) - 8
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	S.D. YP	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.10	5.55	.1673	-.10	4.72	930	-.07	3.55	.0676	-.18	3.47	-.08	3.55	.0676	.0940	-.07	3.55	.0676	-.18	3.47
24	-.09	5.51	.1673	-.10	4.72	930	-.08	4.33	.0974	-.15	4.01	-.09	4.33	.0974	.0843	-.08	4.33	.0974	-.15	4.01
36	-.10	5.42	.1673	-.10	4.72	930	-.09	4.63	.1158	-.12	4.41	-.09	4.63	.1158	.0830	-.09	4.63	.1158	-.12	4.41
48	-.10	5.42	.1673	-.10	4.72	930	-.09	4.60	.1494	-.09	4.60	-.09	4.60	.1494	.0847	-.09	4.60	.1494	-.11	4.58
60	-.12	5.42	.1673	-.10	4.72	930	-.09	4.57	.1501	-.09	4.57	-.09	4.57	.1501	.0841	-.09	4.57	.1501	-.11	4.58
72	-.13	5.43	.1673	-.10	4.72	930	-.08	4.58	.1632	-.08	4.58	-.08	4.58	.1632	.0842	-.08	4.58	.1632	-.10	4.70

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 9
 ALPHA ANGLE - 50.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
12	-.66	6.49	.2715	-.61	5.33	930			
24	-.63	6.41	.2614	-.62	5.32				
36	-.63	6.32	.2478	-.67	5.28				
48	-.65	6.30	.2370	-.67	5.23				
60	-.63	6.29	.2325	-.68	5.20				
72	-.71	6.27	.2312	-.73	5.21				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.66	6.49	.2715	-.61	5.33	930				-.04	-.84	-.17	4.09	.1549	-.71	3.82
24	-.63	6.41	.2614	-.62	5.32							-.29	5.03	.1853	-.65	4.59
36	-.63	6.32	.2478	-.67	5.28							-.39	5.73	.2059	-.60	5.05
48	-.65	6.30	.2370	-.67	5.23							-.44	6.02	.2338	-.59	5.24
60	-.63	6.29	.2325	-.68	5.20							-.48	6.20	.2509	-.59	5.33
72	-.71	6.27	.2312	-.73	5.21							-.50	6.31	.2632	-.60	5.36

STATION, (1268) - CAPE VERDE
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 10
ALPHA A:GLE - 30.0

[illegible]

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12862 - CAPE KENNEDY
 PORT OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE / M - 11
 ALPHA ANGLE - 90.0

X = U(A, T)
 Y = V(A, T)
 XP = U(A, T + DT)
 YP = V(A, T + DT)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	-1.47	8.57	.3326	-1.32	6.80	930	-1.53	-2.24
DT HR	QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, Y)	MEAN XP	S.D. XP
12	-1.55	8.66	.7558	-1.32	6.75	.3349	-1.46	5.56
24	-1.58	8.56	.6263	-1.38	6.72	.2907	-1.44	6.69
36	-1.50	8.58	.4517	-2.02	6.65	.2333	-1.44	7.73
48	-1.67	8.56	.2572	-2.02	6.53	.1333	-1.41	8.03
60	-1.73	8.51	.2375	-2.05	6.53	.1115	-1.41	8.42
72	-1.81	8.47	.1308	-2.13	6.63	.0684	-1.40	8.50
							MEAN YP	S.D. YP
							-2.13	4.73
							-2.04	5.66
							-1.37	5.33
							-1.34	6.56
							-1.32	6.73
							-1.91	6.77

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 12
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
12	-2.06	9.74	.3124	-2.84	7.43	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-2.17	9.75	.7805	-2.85	7.36	.7242	-2.13	6.09	.1265	-3.08	5.07
24	-2.24	9.73	.6432	-2.91	7.31	.5622	-2.06	7.40	.2097	-2.98	6.06
36	-2.29	9.68	.4517	-2.95	7.25	.3546	-2.03	8.69	.2588	-2.91	6.84
48	-2.33	9.65	.3471	-2.96	7.22	.2438	-2.01	9.12	.2789	-2.88	7.13
60	-2.43	9.58	.2313	-3.01	7.22	.1398	-2.00	9.46	.3025	-2.85	7.33
72	-2.52	9.53	.1871	-3.07	7.21	.0949	-1.99	9.54	.3082	-2.83	7.38

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	R (XP,YP)	GIVEN Y	S.D. XP	MEAN XP	S.D. YP
		-2.75	10.28	.274	-3.99	7.84	930						-3.10		-4.48			
12		-2.84	10.24	.7837	.7339	.2661	.3109	.2107	.638	.0696	-4.35	5.24						
24		-2.88	10.20	.6570	.5756	.2602	.2828	.1266	7.73	.1849	-4.25	6.32						
36		-2.92	10.13	.4610	.3967	.2492	.2463	.0613	9.10	.2241	-4.16	7.10						
48		-2.96	10.08	.3476	.2668	.2481	.1937	.0203	9.61	.2489	-4.10	7.49						
60		-3.04	10.02	.2320	.1709	.2337	.1474	-.0195	9.96	.2841	-4.05	7.68						
72		-3.13	9.96	.1880	.1263	.2342	.1158	-.0473	10.05	.2711	-4.03	7.75						

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112553 - CAPE KENNEDY X = UAT (T)
 PERIOD OF RECORD - JULY Y = (T) - (T)
 ALTITUDE (M) - 14 XP = UAT (T - DT)
 ALPHA ANGLE - 90.0 YP = VIAT (T - DT)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X -3.41 S.D. X 8.93 R (X,Y) .2518 MEAN Y -4.52 S.D. Y 7.09 N 930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X -3.78 GIVEN Y -6.01

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-3.45	8.87	.7751	-4.55	7.03	.7319	.2397	.1829	-3.66	5.84	.0419	-5.59	4.74
24	-3.50	8.82	.6723	-4.57	6.96	.6091	.2352	.1078	-3.51	6.60	.1328	-5.39	5.50
36	-3.56	8.74	.4757	-4.59	6.93	.4311	.2314	.0344	-3.38	7.83	.1937	-5.12	6.27
48	-3.61	8.69	.3711	-4.62	6.91	.3324	.2317	.0018	-3.22	8.25	.2214	-4.95	6.60
60	-3.64	8.64	.2783	-4.64	6.88	.2273	.2322	-.0157	-3.28	8.64	.2404	-4.81	6.83
72	-3.73	8.56	.1924	-4.68	6.88	.1775	.2176	-.0533	-3.25	8.72	.2490	-4.73	6.94

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12858 - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 15
 ALPHA ANGLE - 90.0

X = U(1AT 1)
 Y = V(1AT 1)
 XP = U(1AT 1 + DT)
 YP = V(1AT 1 + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
-4.34	6.57	.2673	-3.91	5.60	930

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-4.38	6.50	.7587	-3.91	5.55	.6511	-4.73	4.28	.0805	-4.18	4.12
24	-4.42	6.46	.6903	-3.91	5.50	.6508	-4.65	4.80	.1470	-4.18	4.17
36	-4.43	6.41	.4840	-3.92	5.47	.4634	-4.55	5.73	.1886	-4.13	4.85
48	-4.48	6.41	.3285	-3.91	5.43	.4082	-4.49	6.01	.2264	-4.09	5.04
60	-4.53	6.41	.2735	-3.92	5.41	.2931	-4.42	6.31	.2378	-4.05	5.28
72	-4.60	6.38	.2196	-3.92	5.42	.2707	-4.39	6.40	.2576	-4.02	5.36

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE (FTH) - 17
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (Y,YP)	P (XP,YP)	R (XP,Y)	R (Y,X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-6.30	3.67	.4790	-1.95	3.37	.3389	-1.98	3.36	930	.2318	.2313	.2259	.2257	-6.35	3.19	-6.41	-2.08	-2.03	3.12
24	-6.31	3.66	.5610	-1.92	3.36	.4653					.2320	.2762	.1518	-6.34	3.03			-2.06	2.92
36	-6.72	3.67	.3552	-1.88	3.36	.2680					.2367	.1739	.1370	-6.33	3.42			-2.03	3.21
48	-6.33	3.69	.2933	-1.87	3.36	.3176					.2401	.1634	.0947	-6.31	3.50			-2.05	3.17
60	-6.35	3.69	.2179	-1.85	3.34	.1662					.2481	.1244	.0891	-6.31	3.57			-2.01	3.30
72	-6.36	3.67	.1391	-1.82	3.33	.2144					.2462	.0848	.0630	-6.30	3.63			-2.03	3.28

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (DEG) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0

X = U(AT, T)
 Y = V(AT, T)
 XP = U(AT, T + DT)
 YP = V(AT, T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. Y	MEAN Y	R (X, Y)	N
12	-8.41	2.97	.4317	-1.16	2.88	.0997	.0388	2.87	-1.16	.0348	930
24	-8.41	2.96	.4910	-1.15	2.85	.3956	.0360				
36	-8.43	2.97	.3096	-1.13	2.89	.0600	.0436				
48	-8.44	2.98	.2426	-1.14	2.88	.2035	.0516				
60	-8.48	2.99	.1944	-1.12	2.87	.0138	.0537				
72	-8.49	2.98	.1485	-1.14	2.87	.1263	.0562				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-8.38	2.87	-.0031	-1.16	2.85
24	-8.37	2.82	-.0446	-1.17	2.59
36	-8.37	2.88	.0133	-1.16	2.85
48	-8.37	2.91	.0159	-1.17	2.79
60	-8.37	2.93	.0299	-1.16	2.86
72	-8.38	2.93	.0221	-1.17	2.84

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12853) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 19
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	-10.63	2.86	.1350	-.87	2.65	930	-10.61	-.90

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-10.66	2.86	.2145	-.86	2.67	-.1195	.1318	-.0591	-10.62	2.78	.1652	-.88	2.61
24	-10.70	2.87	.4298	-.88	2.68	-.3839	.1455	.1481	-10.60	2.57	.0221	-.87	2.41
36	-10.72	2.89	.1840	-.89	2.71	-.1140	.1465	-.0954	-10.61	2.80	.1497	-.88	2.62
48	-10.77	2.89	.2985	-.89	2.72	-.2457	.1518	.1778	-10.59	2.71	.0725	-.86	2.56
60	-10.78	2.92	.0891	-.91	2.71	-.1502	.1544	-.0764	-10.52	2.84	.1343	-.89	2.61
72	-10.82	2.92	.2406	-.91	2.71	.2280	.1610	.1444	-10.59	2.76	.0860	-.85	2.57

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112868 - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KNI) - 20
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	-13.01	3.43	.0679	-.81	2.39	930														
12	-13.06	3.41	-.0588	-.80	2.39		-.80	2.41	.0736	-.80	2.41	.0736	-.80	2.41	.0736	-.80	2.41	.0736	-.80	2.41
24	-13.11	3.43	-.0594	-.80	2.41		-.80	2.41	.0788	-.80	2.41	.0788	-.80	2.41	.0788	-.80	2.41	.0788	-.80	2.41
36	-13.14	3.42	-.0951	-.83	2.43		-.83	2.43	.0758	-.83	2.43	.0758	-.83	2.43	.0758	-.83	2.43	.0758	-.83	2.43
48	-13.17	3.44	-.0631	-.81	2.43		-.81	2.43	.0771	-.81	2.43	.0771	-.81	2.43	.0771	-.81	2.43	.0771	-.81	2.43
60	-13.20	3.41	-.1315	-.81	2.43		-.81	2.43	.0726	-.81	2.43	.0726	-.81	2.43	.0726	-.81	2.43	.0726	-.81	2.43
72	-13.23	3.43	-.4173	-.79	2.42		-.79	2.42	.0730	-.79	2.42	.0730	-.79	2.42	.0730	-.79	2.42	.0730	-.79	2.42

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)
DT	-13.01	3.43	.0679	-.81	2.39	.0679
12	-13.06	3.41	-.0588	-.80	2.39	-.0588
24	-13.11	3.43	-.0594	-.80	2.41	-.0594
36	-13.14	3.42	-.0951	-.83	2.43	-.0951
48	-13.17	3.44	-.0631	-.81	2.43	-.0631
60	-13.20	3.41	-.1315	-.81	2.43	-.1315
72	-13.23	3.43	-.4173	-.79	2.42	-.4173

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 21
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP,Y)	MEAN XP	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
12	24	-14.94	3.51	-.2009	-.52	2.72	930	-14.98	-.48	3.41	-.1900	-14.93	2.68	-.1900	-.52	2.68
36	48	-15.01	3.52	-.2028	-.49	2.71		3.02	-.1584	3.40	-.1789	-14.94	2.63	-.1584	-.52	2.63
60	72	-15.10	3.47	-.1905	-.51	2.72		3.23	-.1430	3.44	-.1718	-14.95	2.66	-.1430	-.52	2.66
								3.26	-.1379			-14.90	2.67	-.1379	-.54	2.67

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (X,XP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-16.42	3.27	-.1696	-.30	3.13	930	-16.43	3.12	-.1416	-.29	2.96	-.31	-16.41	3.12	-.1416	-16.41	3.12	-.1416	-.31	2.96
24																				
36																				
48																				
60																				
72																				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 128881 - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 23
 ALEPH ANGLE - 90.0
 Y = UIAT T)
 Y = VIAT T)
 YP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP												CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP											
DT HR	MEAN		S.D. X	P (X, Y)	MEAN		S.D. Y	N	GIVEN X		GIVEN Y		S.D. XP	R (XP, YP)	MEAN XP	S.D. YP							
	XP	Y			XP	YP			XP	YP	XP	YP											
	-17.56		3.32	-0.141	-0.23		3.03	930	-17.53		-0.26												
12	-17.60	3.33	.3794		-.2177		-.042						3.07	-.0090	-17.54	3.02							
24	-17.64	3.30	.4131		-.2722		-.0165						3.02	-.0381	-17.52	2.97							
36	-17.67	3.31	.3826		-.2485		-.0215						3.16	-.0083	-17.50	2.99							
48	-17.70	3.30	.3472		-.2871		-.0293						3.14	-.0110	-17.51	2.96							
60	-17.73	3.29	.2183		-.2980		-.0134						3.24	-.0201	-17.52	3.02							
72	-17.77	3.26	.1967		-.2553		-.0268						3.25	-.0227	-17.52	2.99							

STATION (12858) - CAPE KEMEDY
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/56 - 12/70
ALTIMETER (CM) - 24
ALMA AEGLE - '90.0
X = U(A * T)
Y = V(A * T)
X2 = U(A * T + DT)
YP = V(A * T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP							
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	R (YP, YP)	MEAN YP	S.D. YP
12	-18.71	3.50	.3294	-.25	2.79	-.0258	-2.27	2.81	930	-18.62	-.31	-.0662	-18.63	3.31	-.0662	-.27	2.79
24	-18.76	3.48	.3713	-.23	2.79		-1.767					-.0257	-18.62	3.24	-.0257	-.29	2.79
36	-18.80	3.48	.2828	-.25	2.87		-.0546	-.0313				-.0313	-18.61	3.36	-.0325	-.28	2.79
48	-18.85	3.45	.2942	-.26	2.85		-.2032	-.0327				-.0327	-18.60	3.33	-.0432	-.28	2.75
60	-18.90	3.44	.1923	-.28	2.85		-.0773	-.0232				-.0757	-18.62	3.46	-.0158	-.28	2.79
72	-18.94	3.40	.1995	-.29	2.84		-.1182	-.0275				-.0547	-18.63	3.42	-.0470	-.26	2.78

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12958) - CAPE KEMERDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 25
 ALPHA ANGLE - 50.2

X - U(12958)
 Y - V(12958)
 XP - U(12958) + DT
 YP - V(12958) + DT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	-19.44	3.82	.0182	-.52	2.70	930	-19.40	-.58
DT HR	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP
12	-19.48	3.81	.3597	-.52	2.71	.0482	-19.40	3.55
24	-19.53	3.79	.4465	-.53	2.69	.0821	-19.38	3.41
36	-19.58	3.78	.2739	-.53	2.78	.0285	-19.32	3.67
48	-19.63	3.75	.3476	-.56	2.78	.0817	-19.35	3.55
60	-19.69	3.73	.1908	-.56	2.79	.0563	-19.32	3.75
72	-19.75	3.70	.2573	-.54	2.78	.0427	-19.35	3.53
DT HR	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN YP	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.52	2.71	.0211	-19.40	3.55	-.0735	-.53	2.69
24	-.53	2.69	.0240	-19.38	3.41	.0718	-.52	2.69
36	-.53	2.78	.0179	-19.32	3.67	.0406	-.51	2.69
48	-.56	2.78	.0150	-19.35	3.55	.1227	-.52	2.69
60	-.56	2.79	.0220	-19.32	3.75	.0469	-.53	2.69
72	-.54	2.78	.0355	-19.35	3.53	.0531	-.51	2.69

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12033 - 2195 KENEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE IN FT - 25
 ALPHA ANGLE - 30.0

X = UAT
 Y = VAT
 XP = UAT
 YP = VAT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP			
	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	-20.08	4.35	-0.0384	-0.60	2.88	930	-19.98	-0.56
24								
36								
48								
60								
72								
DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP			
	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN XP	S.D. XP
12	-20.11	4.35	.4533	-0.60	2.88	.0545	-20.02	3.85
24	-20.18	4.23	.4970	-.64	2.99	.0611	-19.93	3.75
36	-20.23	4.22	.3115	-.65	2.92	.0849	-20.00	4.11
48	-20.30	4.18	.3229	-.64	2.91	.0797	-19.93	4.07
60	-20.35	4.16	.2101	-.61	2.91	.0735	-20.01	4.23
72	-20.39	4.15	.2457	-.61	2.90	.0719	-19.98	4.21
DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP			
	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN XP	S.D. YP
12	-20.11	4.35	.4533	-0.60	2.88	.0545	-20.02	3.85
24	-20.18	4.23	.4970	-.64	2.99	.0611	-19.93	3.75
36	-20.23	4.22	.3115	-.65	2.92	.0849	-20.00	4.11
48	-20.30	4.18	.3229	-.64	2.91	.0797	-19.93	4.07
60	-20.35	4.16	.2101	-.61	2.91	.0735	-20.01	4.23
72	-20.39	4.15	.2457	-.61	2.90	.0719	-19.98	4.21

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 27
 ALPHA ANGLE - 50.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-20.56	4.57	.4957	-.81	3.09	-.0384	-.80	3.09	930	-20.38	4.10	-.0898	-.79	3.06
24	-20.52	4.36	.4721	-.85	3.09					-20.35	4.13	-.0540	-.80	3.09
36	-20.58	4.65	.3324	-.87	3.12					-20.36	4.38	-.0507	-.80	3.09
48	-20.70	4.82	.3285	-.86	3.12					-20.35	4.41	-.0383	-.81	3.06
60	-20.74	4.60	.2403	-.84	3.11					-20.39	4.54	-.0454	-.80	3.09
72	-20.79	4.57	.2553	-.85	3.10					-20.37	4.55	-.0455	-.80	3.09

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12858) - CAPE KENNEDY

X = U(1AT T)
Y = V(1AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
7	1/56 - 12/70	0	90.0	-60	2.29	-1.376	1.48	1.84	930
7	1/56 - 12/70	1	90.0	.73	4.40	-.7129	2.73	3.31	930
7	1/56 - 12/70	2	90.0	1.18	4.45	.0581	1.85	3.45	930
7	1/56 - 12/70	3	90.0	1.35	4.59	.1239	1.62	3.51	930
7	1/56 - 12/70	4	90.0	1.36	4.73	.1173	1.45	3.77	930
7	1/56 - 12/70	5	90.0	1.16	4.86	.0779	1.10	3.86	930
7	1/56 - 12/70	6	90.0	.81	4.93	.0539	.76	4.14	930
7	1/56 - 12/70	7	90.0	.28	5.01	.0837	.37	4.36	930
7	1/56 - 12/70	8	90.0	-10	5.55	.1673	-1.10	4.72	930
7	1/56 - 12/70	9	90.0	-66	6.49	.2715	-1.61	5.39	930
7	1/56 - 12/70	10	90.0	-1.01	7.44	.3200	-1.21	6.11	930
7	1/56 - 12/70	11	90.0	-1.47	8.67	.3225	-1.92	6.80	930
7	1/56 - 12/70	12	90.0	-2.05	9.74	.3124	-2.84	7.43	930
7	1/56 - 12/70	13	90.0	-2.75	10.28	.2741	-3.99	7.84	930
7	1/56 - 12/70	14	90.0	-3.41	8.93	.2518	-4.52	7.09	930
7	1/56 - 12/70	15	90.0	-4.24	6.57	.2673	-3.91	5.60	930
7	1/56 - 12/70	16	90.0	-5.07	4.80	.2354	-2.84	4.23	930
7	1/56 - 12/70	17	90.0	-6.28	3.66	.2318	-1.98	3.36	930
7	1/56 - 12/70	18	90.0	-8.39	2.97	.0348	-1.16	2.87	930
7	1/56 - 12/70	19	90.0	-10.63	2.86	.1350	-.87	2.65	930
7	1/56 - 12/70	20	90.0	-13.01	3.43	.0679	-.81	2.39	930
7	1/56 - 12/70	21	90.0	-14.94	3.51	-.2039	-.52	2.72	930
7	1/56 - 12/70	22	90.0	-16.42	3.27	-.1696	-.30	3.13	930
7	1/56 - 12/70	23	90.0	-17.56	3.32	-.0141	-.23	3.09	930
7	1/56 - 12/70	24	90.0	-18.66	3.82	-.0258	-.27	2.81	930
7	1/56 - 12/70	25	90.0	-19.44	3.85	.0182	-.52	2.70	930
7	1/56 - 12/70	25	90.0	-20.08	4.35	-.0864	-.60	2.88	930
7	1/56 - 12/70	25	90.0	-20.49	4.70	-.0384	-.80	3.09	930

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KHI) - C
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP	
	-58	2.14	.0388	.69	1.99	930						-.57	.66						
12	-60	2.15	.2223	.4280	1.99		.1783	.0401	.1783	-.58	1.77	2.08	-.0374		-.58	2.08	.69	1.77	
24	-61	2.15	.4582	.4039	2.01		.0820	.0325	.0820	-.56	1.81	1.83	-.0048		-.56	1.83	.70	1.81	
36	-62	2.17	.0904	.2403	2.01		.1229	.0412	.1229	-.59	1.82	2.13	.0039		-.59	2.13	.70	1.82	
48	-63	2.17	.2843	.2843	2.01		.0656	.0329	.0656	-.56	1.95	2.05	.0228		-.56	2.05	.70	1.95	
60	-66	2.17	.0110	.0805	2.01		.0529	.0389	.0529	-.58	1.99	2.14	.0373		-.58	2.14	.70	1.99	
72	-68	2.16	.2193	.0851	2.01		.0322	.0357	.0322	-.56	1.99	2.09	.0377		-.56	2.09	.70	1.99	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12558) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0
 $X = U(AT \ T)$
 $Y = V(AT \ T)$
 $XP = U(AT \ T + DT)$
 $YP = V(AT \ T + DT)$

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.02	4.42	.7548	1.98	3.60	.1412	2.00	3.59	930	.23	2.91	.1372	1.97	2.74
24	-.03	4.40	.6385	1.96	3.61					.25	3.42	.1348	1.97	3.02
36	-.08	4.39	.4712	1.92	3.61					.23	3.92	.1548	1.99	3.39
48	-.12	4.38	.3710	1.90	3.60					.22	4.13	.1474	2.00	3.47
60	-.19	4.37	.2493	1.87	3.60					.19	4.31	.1570	1.99	3.56
72	-.23	4.37	.1847	1.84	3.60					.18	4.37	.1517	1.98	3.56

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF Y, Y, XP, YP

STATION (12258) - CAPE KENEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (ft) - 2
 ALPHA ANGLE - 52.0

X = U(1,1)
 Y = V(1,1)
 XP = U(1,1) + DT
 YP = V(1,1) + DT

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HP	MEAN XP	S.D. XP	R (X,YP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	.49	4.41	.7497	1.51	3.63	.2291	1.52	3.63	930	.65	1.35	.1503	.63	2.94	1.43	2.71
24	.44	4.33	.6256	1.43	3.62							.2355	.63	3.46	1.45	3.01
36	.40	4.39	.4657	1.47	3.61							.2154	.67	3.93	1.49	3.45
48	.34	4.40	.3530	1.43	3.59							.2487	.67	4.15	1.50	3.53
60	.29	4.40	.2568	1.41	3.58							.2392	.55	4.29	1.51	3.61
72	.23	4.40	.1815	1.37	3.56							.2489	.53	4.37	1.49	3.60

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 30.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	R (XP, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.72	4.65	.7807	1.38	3.72	.2294	1.39	3.72	930	.1496	.2203	.90	2.92	.1699	1.29	2.68
24	.68	4.64	.6528	1.37	3.71	.2274	.5345	.1670		.1273		.91	3.55	.2057	1.32	3.14
36	.65	4.61	.5174	1.36	3.69	.2241	.3221	.1128		.1125		.89	4.01	.2126	1.35	3.52
48	.60	4.60	.3909	1.33	3.67	.2238	.2123	.0357		.0765		.89	4.31	.2417	1.36	3.64
60	.55	4.60	.2755	1.29	3.67	.2257	.0849	-.0160		.0803		.86	4.50	.2425	1.37	3.70
72	.51	4.60	.1936	1.27	3.66	.2255	.0502	-.0774		.0640		.84	4.59	.2490	1.36	3.70

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 11288B1 - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KTS) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
	.93	5.05	.2454	1.22	4.13	930

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP		CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP											
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,X)	R (YP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.88	5.03	.7686	1.21	4.14		.2422	.1865		1.03	3.23	.1123	1.19	3.07
24	.84	5.05	.6728	1.21	4.14		.2433	.1331		1.05	3.74	.2171	1.20	3.56
36	.82	5.03	.5185	1.20	4.13		.2364	.1096		1.03	4.32	.2301	1.21	3.98
48	.79	5.01	.4184	1.20	4.12		.2359	.0134		1.02	4.59	.2686	1.21	4.08
60	.76	5.01	.3034	1.18	4.11		.2312	-.0425		1.01	4.82	.2719	1.21	4.12
72	.72	4.98	.2143	1.16	4.11		.2266	-.0774		.93	4.94	.2688	1.20	4.12

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12958) - CAPE KENNEDY X = U(AT T)
 MONTH OF RECORD - AUGUST Y = V(AT T)
 PERIOD OF RECORD - 1/56 - 12/70 XP = U(AT T + DT)
 ALTITUDE (KMH) - 6 YP = V(AT T + DT)
 ALPHA ANGLE - 90.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.59	5.18	.7536	.83	4.38	.7085	.82	4.37	930	.2171	.68	3.39	.1385	.72	3.06
24	.58	5.19	.6274	.85	4.38	.4893				.1609	.68	4.02	.2033	.75	3.78
36	.56	5.18	.4637	.83	4.37	.2633				.1033	.67	4.57	.2610	.79	4.20
48	.54	5.18	.3596	.82	4.36	.1357				.0527	.67	4.81	.2930	.80	4.53
60	.51	5.17	.2561	.82	4.35	.0422				.0739	.66	4.99	.3073	.80	4.36
72	.51	5.15	.1749	.84	4.36	-.0103				.0527	.64	5.08	.3078	.80	4.36

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
.68	.68

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KHI) - 7
 ALPHA ANGLE - 90.0

X = U(AT, T)
 Y = V(AT, T)
 XP = U(AT, T + DT)
 YP = V(AT, T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP		
12	.25	5.28	.7528	.54	4.70	.3124	.52	4.71	930	.34	.39	.1684	.32	3.45	.1684	.43	3.36		
24	.24	5.29	.6221	.53	4.70	.3095	.4783	.3095				.2090	.31	4.10	.2090	.47	4.07		
36	.23	5.29	.4465	.54	4.68	.3053	.2675	.2032				.2666	.30	4.68	.2666	.50	4.49		
48	.23	5.28	.3336	.54	4.68	.3075	.1402	.1016				.3005	.28	4.94	.3005	.50	4.65		
60	.23	5.27	.2304	.55	4.67	.3012	.0684	.0239				.3173	.27	5.10	.3173	.51	4.70		
72	.23	5.25	.1602	.58	4.66	.2971	.0167	-.0401				.3234	.26	5.17	.3234	.51	4.70		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112889 - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 8
 ALPHA ANGLE - 90.0

$X = U(AT) / T$
 $Y = V(AT) / T$
 $XP = U(AT) / (T + DT)$
 $YP = V(AT) / (T + DT)$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
		-1.10	5.44	.2775	-1.06	5.03	930						.03	-.18					
12	12	-.09	5.47	.7555	.5982	.2776	3012	-.04	3.56	.2776	-.02	3.56	.1004	-.14	.1004	-.02	3.56	-.14	3.55
24	24	-.07	5.47	.6034	.5116	.2743	.2760	-.03	4.34	.2743	.04	4.34	.1636	-.12	.1636	.04	4.26	-.12	4.26
36	36	-.05	5.49	.4457	.3024	.2746	.2107	-.02	4.87	.2746	-.07	4.87	.2171	-.10	.2171	-.07	4.74	-.10	4.74
48	48	-.02	5.49	.3437	.1861	.2735	.1327	.00	5.11	.2735	-.09	5.11	.2517	-.09	.2517	-.09	5.02	-.09	5.02
60	60	-.01	5.50	.2511	.0974	.2677	.0540	.02	5.27	.2677	-.09	5.27	.2752	-.08	.2752	-.09	5.00	-.08	5.00
72	72	.00	5.49	.1915	.0457	.2673	-.0156	.05	5.34	.2673	-.10	5.34	.2754	-.08	.2754	-.10	5.02	-.08	5.02

STATION NUMBER	- 0000000000	X = U'AT
STATION NAME	- ALBANY	Y = V(AT)
STATION OF RECORD	- 1958 - 12/70	
DATE OF RECORD	- 9	XP = U'AT + DT
TIME OF DAY	- 30.0	YP = V(AT) + DT
ALPHA VALUE	- 30.0	

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128881) - CAE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/1/70 - 12/70
 ALTITUDE (ft) - 10
 ALPHA ANGLE - 50.0

X = U(1,1)
 Y = V(1,1)
 XP = U(1,1 + DT)
 YP = V(1,1 + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
	-1.43	6.66	.3648	-1.96	6.72	930

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-1.33	6.70	.7339	-1.96	6.74	.7326	-1.35	6.53	.1859	-1.01	4.51
24	-1.37	6.68	.5906	-1.92	6.73	.5465	-1.38	5.38	.2407	-1.01	5.53
36	-1.31	6.73	.4397	-1.90	6.72	.3832	-1.42	5.98	.2800	-1.00	6.16
48	-1.25	6.71	.3494	-1.91	6.70	.2890	-1.45	6.24	.3180	-.99	6.58
60	-1.16	6.70	.2578	-1.86	6.69	.1420	-1.47	6.43	.3459	-.99	6.64
72	-1.12	6.70	.2129	-1.81	6.66	.0949	-1.47	6.51	.3601	-.99	6.69

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	-.29	-1.05

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 113 (B) - CAPE KENEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE - 10
 ALPHA ANGLE - 30.0

X = 1.17 (T)
 Y = 1.17 (T)
 XP = 1.17 (T) + 2.7
 YP = 1.17 (T) + 3.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N
	-1.60	7.68	.3746	-1.35	7.56	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN XP,YP	S.D. XP,YP	MEAN YP	S.D. YP
12	-1.51	7.66	.7267	-1.34	7.58	.7577	.3857	.3823	.2879	.2879
24	-1.45	7.67	.6076	-1.30	7.53	.5819	.3531	.3533	.2686	.2686
36	-1.38	7.71	.4433	-1.23	7.53	.4035	.3223	.3233	.2161	.2161
48	-1.28	7.65	.3779	-1.20	7.58	.2675	.3233	.2419	.1723	.1723
60	-1.18	7.63	.2723	-1.27	7.57	.1620	.3326	.1626	.1401	.1401
72	-1.11	7.62	.2335	-1.21	7.54	.0961	.3277	.1035	.1133	.1133

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12973) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ACT. JOE 'NM. - 12
 ALPHA ANGLE - 90.0
 X = U/IAT T)
 Y = V/IAT T)
 XP = U/IAT T + DT)
 YP = V/IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP																												
DY HR	MEAN				S.D.				R				P				N				GIVEN X				GIVEN Y			
	XP	X	YP	Y	XP	X	YP	Y	(X,XP)	(X,Y)	(X,YP)	(Y,Y)	(Y,XP)	(Y,YP)	(XP,Y)	(XP,XP)	(XP,YP)	(YP,Y)	(YP,XP)	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP			
12	-1.70	-1.82	-1.82	-2.04	8.49	8.53	8.42	8.38	.7412	.3453	.7743	.3575	.3553	.3553	.2833	.2833	.2833	.2833	.2833	5.73	.1735	-2.07	5.25	-2.07	5.25			
24	-1.63	-1.82	-1.82	-2.04	8.49	8.53	8.42	8.38	.6317	.3453	.6087	.3575	.3553	.3553	.2833	.2833	.2833	.2833	.2833	6.62	.2233	-2.10	6.56	-2.10	6.56			
36	-1.55	-1.82	-1.82	-2.04	8.51	8.53	8.42	8.38	.4641	.3453	.4283	.3575	.3553	.3553	.2833	.2833	.2833	.2833	.2833	7.56	.2532	-2.11	7.43	-2.11	7.43			
48	-1.45	-1.82	-1.82	-2.04	8.47	8.53	8.42	8.38	.3157	.3453	.2730	.3575	.3553	.3553	.2833	.2833	.2833	.2833	.2833	7.77	.2335	-2.11	7.31	-2.11	7.31			
60	-1.35	-1.82	-1.82	-2.04	8.43	8.53	8.44	8.34	.2035	.3453	.1755	.3575	.3553	.3553	.2833	.2833	.2833	.2833	.2833	8.17	.3123	-2.11	8.09	-2.11	8.09			
72	-1.25	-1.82	-1.82	-2.04	8.40	8.53	8.41	8.31	.2534	.3453	.1535	.3575	.3553	.3553	.2833	.2833	.2833	.2833	.2833	8.24	.3342	-2.11	8.23	-2.11	8.23			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112858) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 30.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP, YP)	MEAN YP	S.D. YP
12	-1.01	8.75	.3332	-2.96	8.53	.930													
24																			
36																			
48																			
60																			
72																			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1123581 - CAPE KENEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/73
 ALTITUDE (M) - 14
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (X, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.63	7.89	.3615	-3.34	7.33	930											
20	-1.63	7.89	.3615	-3.34	7.33	930	-1.55	4.72	.1554	-3.43	4.75		-1.55	4.72	.1554	-3.43	4.75
30	-1.55	7.32	.7019	-1.61	5.61		-1.55	4.72	.1554	-3.43	4.75		-1.55	4.72	.1554	-3.43	4.75
40	-1.45	7.95	.5403	-1.59	5.63		-1.59	5.63	.2577	-3.42	6.32		-1.59	5.63	.2577	-3.42	6.32
50	-1.32	7.96	.4575	-1.73	7.01		-1.73	7.01	.2871	-3.42	7.72		-1.73	7.01	.2871	-3.42	7.72
60	-1.23	7.95	.3413	-1.75	7.41		-1.75	7.41	.3170	-3.42	7.02		-1.75	7.41	.3170	-3.42	7.02
72	-1.12	7.95	.3015	-1.77	7.51		-1.77	7.51	.3297	-3.43	7.14		-1.77	7.51	.3297	-3.43	7.14

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-2.65	5.23	.3338	-2.59	5.23	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-2.59	6.24	.7658	-2.56	5.26	.7080	-2.52	3.99	.0556	-2.55	3.63
24	-2.53	6.25	.7119	-2.53	5.28	.6656	-2.58	4.37	.0752	-2.58	3.81
36	-2.46	6.29	.5473	-2.50	5.29	.5027	-2.63	5.19	.1689	-2.59	4.43
48	-2.35	6.32	.4784	-2.48	5.29	.4285	-2.68	5.45	.1996	-2.62	4.62
60	-2.27	6.33	.3637	-2.45	5.30	.3052	-2.71	5.79	.2496	-2.63	4.88
72	-2.16	6.28	.3133	-2.43	5.28	.2585	-2.73	5.91	.2695	-2.65	4.95

STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 16
ALPHA ANGLE - 90.0

X = U/IAT T)
Y = V/IAT T)
XP = U/IAT T + DT)
YP = V/IAT T + DT)

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 17
 ALPHA ANGLE - 93.3

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN
 X
 -5.86

S.D.
 X
 3.61

R
 (X, Y)
 .2055

MEAN
 Y
 -1.17

S.D.
 Y
 3.14

N
 930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT MR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-5.81	3.63	.5533	-1.16	3.16	.3474	.2160	.2677	.2870	-5.75	2.94	.0087	-1.08	2.88
24	-5.77	3.66	.6017	-1.17	3.16	.4659	.2238	.2674	.1864	-5.79	2.88	.0735	-1.07	2.73
36	-5.74	3.70	.4491	-1.16	3.17	.2858	.2336	.2308	.2124	-5.80	3.20	.0902	-1.11	2.97
48	-5.69	3.70	.4274	-1.16	3.17	.2746	.2355	.2108	.1488	-5.84	3.26	.1212	-1.12	2.99
60	-5.84	3.77	.3038	-1.14	3.16	.1908	.2316	.1369	.1908	-5.84	3.41	.1556	-1.14	3.07
72	-5.61	3.77	.2947	-1.15	3.17	.1577	.2290	.1481	.1727	-5.85	3.43	.1590	-1.15	3.08

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112888) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
-8.08	3.04	.0639	-.80	2.83	930	-7.90	-.63

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-8.03	3.04	.4895	-.82	2.84	.0529	-7.98	2.61	-.0112	-.78	2.79
24	-8.01	3.08	.5895	-.81	2.85	.3817	-8.02	2.46	-.0158	-.72	2.59
36	-7.96	3.11	.4163	-.82	2.83	.0301	-8.04	2.75	.0036	-.79	2.79
48	-7.91	3.13	.4351	-.79	2.83	.2335	-8.08	2.74	.0191	-.76	2.73
60	-7.85	3.15	.4193	-.79	2.83	-.0045	-8.08	2.87	.0326	-.81	2.81
72	-7.81	3.16	.3161	-.78	2.81	.1707	-8.11	2.89	.0481	-.79	2.78

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128581) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N									
	-10.58	3.07	.1785	-.64	2.58	930									
								</							

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	S.D. X	MEAN Y	R (X,Y)	S.D. Y	N	MEAN XP	R (XP,Y)	S.D. XP	MEAN YP	R (XP,YP)	S.D. YP
12	-13.03	3.42	.0788	3.39	-1.44	.1099	2.34	930	-13.05	.0132	3.38	-13.05	.1138	2.34
24	-12.97	3.40	.5367						-13.05	.0760	2.86	-13.05	.0346	2.27
36	-12.95	3.41	.0418						-13.05	-.0268	3.39	-13.05	.1105	2.34
48	-12.90	3.40	.4320						-13.08	.0902	3.05	-13.08	.0678	2.33
60	-12.86	3.43	-.0032						-13.05	-.0597	3.38	-13.05	.1056	2.33
72	-12.81	3.41	.3607						-13.11	.0669	3.16	-13.11	.0866	2.33

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 2
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,YP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-14.87	3.46	.0858	-.28	2.42	-.0681	-.31	2.41	930	-14.78	-.27	-14.89	3.41	-.0314	-.30	2.39
24	-14.81	3.44	.5395	-.29	2.42	.1771						-14.88	2.90	.0198	-.31	2.37
36	-14.80	3.41	.0680	-.28	2.41	-.0791						-14.89	3.41	-.0259	-.31	2.39
48	-14.74	3.40	.4431	-.26	2.41	.0665						-14.91	3.09	-.0067	-.31	2.41
60	-14.70	3.44	.0508	-.27	2.40	-.0910						-14.90	3.42	-.0232	-.32	2.33
72	-14.65	3.45	.3853	-.27	2.41	.0889						-14.95	3.16	-.0134	-.31	2.40

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 53.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-16.38	3.37	-.1259	-.22	2.67	930	-16.38	3.15	-.1377	-.22	2.57	-.2093	2.65	-.1317	-16.38	3.15	-.1377	-.22	2.57
24	-16.34	3.38	-.21	-.21	2.64	4984	-16.27	3.37	-.1219	-.21	2.49	-.3515	2.64	-.1219	-16.38	3.21	-.0694	-.21	2.49
36	-16.23	3.37	-.19	-.19	2.60	2144	-16.23	3.37	-.1173	-.19	2.61	-.1811	2.60	-.1173	-16.39	3.21	-.1223	-.23	2.61
48	-16.17	3.37	-.16	-.16	2.64	3720	-16.17	3.37	-.1119	-.16	2.57	-.2565	2.64	-.1119	-16.42	3.13	-.0796	-.22	2.57
60	-16.12	3.40	-.14	-.14	2.61	1858	-16.12	3.40	-.1177	-.14	2.59	-.1879	2.61	-.1177	-16.44	3.24	-.1197	-.23	2.61
72	-16.05	3.40	-.15	-.15	2.61	2932	-16.05	3.40	-.1194	-.15	2.59	-.2363	2.61	-.1194	-16.44	3.22	-.0981	-.22	2.59

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
-16.28	-.18	-.1377	-16.38	3.15	-.1377	-.22	2.57

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 23
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	-17.36	3.38	.0228	-.16	2.91	930	-17.34	3.04	.0035	-.17	2.97	.0035	-.17	2.97
24														
36														
48														
60														
72														

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	-17.31	3.37	.4202	-.16	2.94	.0758	-17.34	3.04	.0035	-.17	2.97	.0035	-.17	2.97
24	-17.25	3.37	.4189	-.18	2.93	-.0180	-17.37	3.06	.0339	-.13	2.74	.0339	-.13	2.74
36	-17.21	3.36	.3405	-.15	2.86	.0231	-17.38	3.16	.0263	-.17	2.87	.0263	-.17	2.87
48	-17.16	3.37	.3071	-.15	2.85	.0083	-17.40	3.21	.0190	-.14	2.81	.0190	-.14	2.81
60	-17.11	3.38	.2781	-.13	2.86	.0423	-17.41	3.25	.0201	-.18	2.86	.0201	-.18	2.86
72	-17.06	3.41	.2364	-.14	2.87	.0023	-17.41	3.28	.0281	-.15	2.83	.0281	-.15	2.83

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128.0) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN Yp	S.D. Yp
12	-18.35	3.64	.0425	-.17	2.80	930	-18.33	3.38	.0598	-.17	2.79			
24														
36														
48														
60														
72														

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 95.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	GIVEN X	GIVEN Y	MEAN YP	S.D. YP	R (XP, YP)
12	-19.15	3.84	.333	-19.22	3.82	930	-19.22	3.82	-.0303	-19.22	3.82	-.0303	-19.22	3.82	-19.11	-.35	-19.22	3.82	-.0015
24	-19.10	3.85	.3472	-19.22	3.82	930	-19.22	3.82	-.0303	-19.22	3.82	-.0303	-19.22	3.82	-19.11	-.35	-19.22	3.82	-.0239
36	-19.05	3.85	.2403	-19.22	3.82	930	-19.22	3.82	-.0303	-19.22	3.82	-.0303	-19.22	3.82	-19.11	-.35	-19.22	3.82	-.0147
48	-19.01	3.87	.2680	-19.22	3.82	930	-19.22	3.82	-.0303	-19.22	3.82	-.0303	-19.22	3.82	-19.11	-.35	-19.22	3.82	-.0322
60	-18.95	3.88	.1505	-19.22	3.82	930	-19.22	3.82	-.0303	-19.22	3.82	-.0303	-19.22	3.82	-19.11	-.35	-19.22	3.82	-.0244
72	-18.89	3.90	.1955	-19.22	3.82	930	-19.22	3.82	-.0303	-19.22	3.82	-.0303	-19.22	3.82	-19.11	-.35	-19.22	3.82	-.0345

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/75
 ALTITUDE (KA) - 27
 ALPHA ANGLE - 30.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y P	S.D. Y P
12	-20.45	4.40	-0.0251	-1.09	2.94	930	-20.40	4.06	-0.036	-1.09	2.91	-0.036	-1.09	2.91
24							-20.43	4.05	-0.036	-1.09	2.92	-0.036	-1.09	2.92
36							-20.44	4.24	-0.036	-1.09	2.94	-0.036	-1.09	2.94
48							-20.44	4.14	-0.036	-1.10	2.90	-0.036	-1.10	2.90
60							-20.46	4.32	-0.036	-1.10	2.91	-0.036	-1.10	2.91
72							-20.47	4.26	-0.036	-1.09	2.92	-0.036	-1.09	2.92

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STATION (12883) - CAPE KENEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 0
ALPHA ANGLE - 90.0

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-2.28	5.65	.2675	.40	4.93	900													
24																			
36																			
48																			
60																			
72																			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-2.27	5.65	.7763	.38	4.93	900	-2.10	3.56	.1028	.43	3.51	-2.10	3.56	.1028	-2.10	3.56	.1028	.43	3.51
24	-2.28	5.65	.6194	.38	4.95	900	-2.13	4.45	.1616	.43	4.15	-2.13	4.45	.1616	-2.13	4.45	.1616	.43	4.15
36	-2.26	5.64	.4196	.41	4.99	900	-2.18	5.12	.2288	.42	4.63	-2.18	5.12	.2288	-2.18	5.12	.2288	.42	4.63
48	-2.28	5.63	.2944	.41	5.01	900	-2.20	5.41	.2481	.41	4.75	-2.20	5.41	.2481	-2.20	5.41	.2481	.41	4.75
60	-2.26	5.64	.1739	.40	5.04	900	-2.23	5.56	.2622	.41	4.88	-2.23	5.56	.2622	-2.23	5.56	.2622	.41	4.88
72	-2.28	5.66	.1117	.43	5.08	900	-2.24	5.61	.2702	.39	4.90	-2.24	5.61	.2702	-2.24	5.61	.2702	.39	4.90

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-.93	5.99	.2796	.42	4.77	900											
12	-.91	6.00	.7815	.43	4.79		.43	4.79	.2825	.43	4.81	.2230	-.91	3.73	.0552	.47	3.39
24	-.91	6.00	.6296	.46	4.81		.46	4.81	.2823	.46	4.83	.1686	-.92	4.63	.1561	.44	4.05
36	-.86	5.99	.4677	.48	4.83		.48	4.83	.2816	.48	4.85	.1155	-.94	5.29	.2198	.42	4.49
48	-.84	5.97	.3347	.52	4.89		.52	4.89	.2789	.52	4.91	.0687	-.95	5.59	.2499	.41	4.59
60	-.82	5.98	.2649	.53	4.92		.53	4.92	.2798	.53	4.95	.0649	-.95	5.77	.2628	.42	4.70
72	-.80	6.00	.1886	.53	4.95		.53	4.95	.2798	.53	4.95	.0482	-.95	5.88	.2741	.42	4.74

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.02	6.01	.7836	.55	4.65	.6856	.52	4.63	900	.25	.61	.17	3.73	.0358	.59	3.33
24	.03	6.01	.6424	.58	4.69	.4956						.13	4.60	.1128	.57	3.96
36	.05	6.01	.4937	.60	4.74	.3120						.09	5.22	.1715	.55	4.33
48	.06	5.99	.3745	.62	4.77	.2351						.06	5.57	.2030	.54	4.44
60	.07	5.99	.2859	.65	4.81	.1688						.04	5.75	.2311	.53	4.53
72	.09	6.01	.2242	.67	4.84	.1058						.03	5.85	.2425	.53	4.59

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12058) - CAPE WERREY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/79
 ALTITUDE (MM) - 4
 ALPHA ANGLE - 90.0

X = U(1,1)
 Y = V(1,1)

XP = U(1,1) + DT
 YP = V(1,1) + DT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN
 X
 .59

S.D.
 X
 6.01

R
 (X,Y)
 .2834

MEAN
 Y
 .56

S.D.
 Y
 4.62

R
 (X,Y)
 .2834

DT
 12
 24
 36
 48
 60
 72

MEAN
 XP
 .69

S.D.
 XP
 6.22

R
 (X,XP)
 .7842

MEAN
 YP
 .61

S.D.
 YP
 4.59

R
 (Y,YP)
 .7206

R
 (XP,Y)
 .2988

R
 (XP,YP)
 .2853

R
 (XP,X)
 .2514

R
 (YP,X)
 .2115

R
 (YP,Y)
 .2813

R
 (YP,XP)
 .2511

R
 (XP,YP)
 .2511

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 (XP,X)
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R
 (YP,Y)
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STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 5
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT)
YP = V(AT T + DT)

UNIDIMENSIONAL NORMAL STATISTICS OF X, Y, XP, YP															CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP														
MEAN X		S.D. X	R (X, Y)	MEAN Y		S.D. Y	N	MEAN XP		S.D. XP	R (XP, Y)	MEAN YP		S.D. YP	MEAN X GIVEN Y		R (X, YP)	MEAN YP GIVEN X		S.D. YP GIVEN X									
.89		6.21	.3041	.39		4.89	900									1.06			.42										
MEAN XP		S.D. XP	R (X, XP)	MEAN YP		S.D. YP		R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)																		
.95		6.23	.8079	.44		4.33		.7083	.3072	.3420	.2717			.98	3.65	.0299			.38		3.39								
1.02		6.24	.6946	.48		4.97		.5512	.3053	.3080	.2124			.91	4.69	.1949			.36		4.01								
1.05		6.25	.5059	.52		5.03		.3557	.2955	.2762	.1755			.89	5.35	.1980			.36		4.48								
1.08		6.26	.4158	.55		5.07		.2392	.2918	.2316	.1306			.88	5.65	.2370			.36		4.67								
1.11		6.26	.3381	.58		5.15		.1704	.2852	.1612	.1015			.87	5.84	.2704			.36		4.78								
1.16		6.25	.2977	.60		5.18		.1152	.2630	.1069	.0814			.86	5.92	.2905			.36		4.84								

QUADRANTAL AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12882 - CAPE MERRY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1956 - 1970
 ALTITUDE (FT) - 6
 AVERAGE WIND - 30.5

QUADRANTAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
DT	MEAN X	S.D. X	P (X, YP)	MEAN Y	S.D. Y	P (Y, XP)	MEAN XP	S.D. XP	MEAN YP
12	1.17	0.45	.0033	.25	5.28	.7430	.25	3.52	.17
24	1.24	0.45	.0040	.25	5.28	.6645	.25	3.52	.15
36	1.28	0.47	.0058	.25	5.28	.5311	.25	3.52	.13
48	1.31	0.47	.0066	.25	5.28	.3749	.25	3.52	.12
60	1.35	0.48	.0077	.25	5.28	.2093	.25	3.52	.11
72	1.41	0.45	.0178	.25	5.28	.1353	.25	3.52	.10

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	.13	3.52	.0878	.17	3.52
24	.13	3.75	.1315	.15	3.52
36	.13	3.43	.1737	.14	3.52
48	.13	3.79	.2158	.14	3.52
60	.13	6.05	.2457	.15	3.52
72	.13	6.11	.2744	.16	3.52

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 7
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP
12	1.54	6.94	.3467	.23	5.76	900	1.54	6.94
24								
36								
48								
60								
72								

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128631 - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 8
 ALPHA ANGLE - 93.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
DT	MEAN XP	S.D. XP	P (X, XP)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	P (Y, YP)
12	2.29	7.60	.8322	.11	6.33	900	.787	6.33	.787
24	2.39	7.64	.7224				.5245	6.42	.5245
36	2.49	7.69	.5936				.4513	6.45	.4513
48	2.56	7.69	.4345				.3474	6.50	.3474
60	2.63	7.70	.2822				.2706	6.58	.2706
72	2.70	7.70	.1887				.2287	6.67	.2287
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	P (XP, YP)
	2.20	7.56	.3835	.11	6.33	.900	2.12	6.14	.0567
							2.06	5.23	.1473
							2.03	6.05	.2226
							2.02	6.57	.2571
							2.01	6.83	.2921
							2.01	6.99	.3170
	MEAN YP	S.D. YP	P (YP, X)	MEAN XP	S.D. XP	R (YP, X)	MEAN YP	S.D. YP	P (YP, X)
	.787	6.33	.787	2.12	6.14	.0567	.04	3.95	.04
	.5245	6.42	.5245	2.06	5.23	.1473	-.01	4.86	-.01
	.4513	6.45	.4513	2.03	6.05	.2226	-.04	5.45	-.04
	.3474	6.50	.3474	2.02	6.57	.2571	-.03	5.72	-.03
	.2706	6.58	.2706	2.01	6.83	.2921	-.02	5.92	-.02
	.2287	6.67	.2287	2.01	6.99	.3170	-.01	6.05	-.01

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KEMEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/55 - 12/73
 ALTITUDE (M) - 9
 ALPHA ANGLE - 90.0

X = U(1AT 1)
 Y = V(1AT 1)
 XP = U(1AT 1 + DT)
 YP = V(1AT 1 + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	3.10	8.17	.3858	.10	7.00	900	3.13	.10
MR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP
	3.21	8.19	.8343	.18	7.05	.4275	3.04	8.51
	3.35	8.22	.7244	.28	7.13	.4215	2.95	8.83
	3.48	8.27	.6248	.37	7.17	.3966	2.89	9.51
	3.57	8.28	.5297	.45	7.21	.3735	2.88	7.53
72	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
	3.63	8.28	.4325	.43	7.28	.3137	2.88	7.35
	3.75	8.27	.3775	.53	7.35	.2625	2.85	7.54
	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
	3.88	8.27	.3248	.62	7.41	.2323	2.85	7.54
	3.99	8.27	.2748	.71	7.47	.2165	2.85	7.54
	4.10	8.27	.2248	.80	7.53	.2032	2.85	7.54
	4.21	8.27	.1748	.89	7.58	.1908	2.85	7.54

[illegible]277

STATION (12088) - CAPE KENNEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 11
ALPHA ANGLE - 90.0

X = U/IAT T)
Y = VIAT T)
XP = U/IAT T + DT)
YP = VIAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP				
		MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N			GIVEN X	GIVEN Y			
		4.85	10.03	.3785	-4.9	9.02	900			4.82	-8.3			
		MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	R (YP,X)		S.D. XP	R (XP,YP)	MEAN XP	S.D. YP	
OT	HR													
12	12	4.97	10.03	.8427	-4.4	9.11	.4017	.3225		5.40	.0913	4.72	-80	5.42
24	24	5.16	10.04	.7299	-3.6	9.17	.4059	.2686		6.85	.1491	4.60	-81	6.85
36	36	5.26	10.09	.6040	-2.8	9.22	.3930	.2430		7.98	.1919	4.56	-80	7.97
48	48	5.40	10.12	.4971	-2.1	9.27	.3620	.2124		8.69	.2418	4.55	-79	8.07
60	60	5.48	10.13	.4121	-1.5	9.29	.3408	.2011		9.11	.2817	4.55	-77	8.39
72	72	5.63	10.10	.3533	-1.4	9.37	.3277	.2138		9.32	.3094	4.52	-75	8.57

STATION (12658)	-	CAPE KENNEDY	X = U(AT T)
MONTH OF RECORD	-	SEPTEMBER	Y = V(AT T)
PERIOD OF RECORD	-	1/56 - 12/70	XP = U(AT T + DT)
ALTITUDE (KM)	-	13	YP = V(AT T + DT)
ALPHA ANGLE	-	90.0	

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112858) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	5.06	10.22	.0625	-2.41	9.49	.8239	-2.46	9.48	900	4.93	-2.43	4.80	5.13	.1329	-2.48	5.32
24	5.26	10.21	.7782	-2.34	9.56	.6966						4.65	6.36	.1442	-2.56	5.77
36	5.40	10.25	.6621	-2.30	9.58	.5098						4.60	7.59	.1654	-2.59	6.01
48	5.49	10.24	.5648	-2.21	9.57	.3856						4.60	8.37	.1692	-2.63	6.57
60	5.64	10.22	.4860	-2.15	9.62	.2491						4.57	8.88	.1857	-2.65	6.96
72	5.82	10.17	.4352	-2.13	9.66	.2057						4.52	9.14	.1950	-2.66	6.13

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12953) - CAPE WISKEY
 MONTH OF RECORD - SEPTEMBER
 YEAR OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) - 15
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. YP	R (XP, YP)	R (XP, Y)	R (YP, X)
12	2.84	8.66	.8516	-2.41	7.22	900	2.79	7.25	.2181	.2652	.1649
24	3.03	8.67	.7854					7.29	.2175	.2670	.1326
36	3.14	8.71	.6759					7.30	.2156	.2635	.1085
48	3.25	8.68	.5911					7.31	.2143	.2636	.1112
60	3.37	8.65	.5307					7.36	.2086	.2437	.1245
72	3.52	8.62	.4441					7.40	.2055	.2135	.1261

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
GIVEN X	2.79	4.34	.0430	-2.32	4.11
GIVEN Y	2.57	5.29	.0878	-2.38	5.12
		6.30	.1071	-2.43	5.93
		6.91	.1013	-2.47	6.43
		7.41	.1197	-2.50	6.74
		7.67	.1410	-2.52	6.91

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12958) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 16
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X, Y)	P (X, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	P (XP, Y)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X, Y)	P (X, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.34	6.65	.8503	-1.96	5.18	.6284	-1.98	5.15	900	.23	6.62	.3031	.3031	-1.96	5.18	.2996	-1.97	5.14	.2593	.3113	.6284	5.19	5.18	900	.23	6.65	.8503	-1.96	5.18	.2996	-1.97	5.14
24	.46	6.68	.8671	-1.93	5.19	.6693	-1.98	5.15	900	.23	6.62	.3031	.3031	-1.93	5.19	.2970	-2.00	5.15	.2593	.3106	.6693	5.21	5.19	900	.23	6.68	.8671	-1.93	5.19	.2970	-2.00	5.15
36	.57	6.69	.8750	-1.90	5.21	.4834	-1.98	5.15	900	.23	6.62	.3031	.3031	-1.90	5.21	.2963	-2.05	5.15	.2227	.3144	.4834	5.23	5.21	900	.23	6.69	.8750	-1.90	5.21	.2963	-2.05	5.15
48	.71	6.71	.8450	-1.83	5.23	.3666	-1.98	5.15	900	.23	6.62	.3031	.3031	-1.83	5.23	.2879	-2.08	5.15	.1871	.3027	.3666	5.23	5.23	900	.23	6.71	.8450	-1.83	5.23	.2879	-2.08	5.15
60	.83	6.69	.5615	-1.84	5.23	.2633	-1.98	5.15	900	.23	6.62	.3031	.3031	-1.84	5.23	.2850	-2.12	5.15	.1637	.2891	.2633	5.25	5.23	900	.23	6.69	.5615	-1.84	5.23	.2850	-2.12	5.15
72	.96	6.67	.5148	-1.82	5.25	.2270	-1.98	5.15	900	.23	6.62	.3031	.3031	-1.82	5.25	.2767	-2.14	5.15	.1783	.2575	.2270	5.25	5.25	900	.23	6.67	.5148	-1.82	5.25	.2767	-2.14	5.15

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12893) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 17
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	GIVEN X	GIVEN Y	P (XP, YP)	S.D. XP	S.D. YP		
12	-1.81	5.38	.2205	-1.21	3.71	900	-1.87	3.54	.0474	-1.19	3.17	.2114	-1.80	-1.10	.0774	3.54	3.17		
24	-1.61	5.40	.7729	.5591	.2147	.2301	-1.95	3.43	.0530	-1.20	3.03	.1553	-1.93		.0530	3.43	3.03		
36	-1.51	5.40	.8261	.2894	.2145	.2398	-2.04	4.20	.1286	-1.23	3.51	.1286	-2.04		.1231	4.20	3.51		
48	-1.41	5.41	.5981	.2719	.2066	.2278	-2.06	4.34	.1110	-1.25	3.51	.1267	-2.06		.1110	4.34	3.51		
60	-1.30	5.40	.4965	.0688	.2103	.1701	-2.09	4.67	.0795	-1.26	3.65	.0795	-2.09		.1603	4.67	3.65		
72	-1.20	5.37	.4616	.0594	.2039	.1725	-2.09	4.78	.1609	-1.28	3.65	.1078	-2.09		.1609	4.78	3.65		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1128-8) - CAPE KEMEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (M) - 15
 ALPHA ANGLE - 50.0

X = VIAT T)
 Y = VIAT T)

XP = VIAT T + D)
 YP = VIAT T + D)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)
12	-3.89	4.43	.2028	-.75	3.01	800	-3.81	3.20	.1118	-.72	3.95	.1679	-3.90	3.20	.1118	-.75	3.95	.1679
24																		
36																		
48																		
60																		
72																		

STATISTICS ON THE EFFECTS OF THE 1960-1961 WINTER STORMS ON THE ECONOMY OF THE UNITED STATES

1. The following table shows the estimated economic losses in the United States during the winter of 1960-1961, by region and by type of loss.

NORTH		SOUTH		WEST		MIDWEST		SOUTHWEST		TOTAL	
TYPE	ESTIMATE	TYPE	ESTIMATE	TYPE	ESTIMATE	TYPE	ESTIMATE	TYPE	ESTIMATE	TYPE	ESTIMATE
1. Property damage	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2. Business losses	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
3. Personal losses	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4. Government losses	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5. Total	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12859) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KHI) - 20
 ALPHA ANGLE - 50.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
DT	-8.07	3.89	.1293	-4.5	2.42	900													
12	-7.98	3.88	.5362	.0342	.1476				.1073						-8.69	3.28	.1443	-.46	2.42
24	-7.86	3.84	.6570	.2163	.1479				.0644						-8.92	2.93	.0865	-.52	2.35
36	-7.77	3.83	.4595	.0100	.1529				.0826						-8.71	3.46	.1310	-.48	2.42
48	-7.67	3.79	.5174	.0210	.1527				.0264						-8.86	3.33	.1273	-.49	2.41
60	-7.58	3.83	.3495	-.0579	.1462				.0499						-8.63	3.65	.1393	-.46	2.41
72	-7.47	3.81	.4161	-.0016	.1434				.0374						-8.78	3.54	.1363	-.47	2.42

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	-9.13	-.46

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X _P	S.D. X _P	MEAN Y _P	R (X,Y)	MEAN Y	S.D. Y	N	MEAN X _P	S.D. X _P	R (X _P ,Y _P)	MEAN Y _P	S.D. Y _P	GIVEN X _P	R (X _P ,Y _P)	MEAN Y _P	S.D. Y _P
	-10.89	3.55	-0.0208		0.27	2.50	900		-10.95		-0.25					
12	-10.79	3.55	-0.27	2.52	-0.152	-0.0346	-0.0381	-10.98	2.94	.0015	-0.26	2.49				
24	-10.67	3.55	-0.28	2.51	.1836	-0.0239	-0.0364	-11.06	2.85	.0068	-0.26	2.45				
36	-10.57	3.56	-0.26	2.54	-0.0459	-0.0337	-0.0444	-11.07	3.08	.0039	-0.26	2.49				
48	-10.45	3.58	-0.27	2.50	.0576	-0.0037	-0.0502	-11.11	3.16	.0028	-0.25	2.49				
60	-10.34	3.59	-0.28	2.51	-0.0537	-0.0061	-0.052	-11.13	3.25	-0.0155	-0.26	2.49				
72	-10.22	3.65	-0.20	2.50	.0146	-0.0053	-0.0808	-11.16	3.28	-0.0111	-0.23	2.49				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	-11.79	3.72					-0.27	2.51	900	-11.80	-0.27					
12	-11.67	3.74	.5870	-0.25	2.47	-.0489	-.0489	.0242	.0331	3.01	.0112	-11.87	3.01	.0112	-.28	2.51
24	-11.57	3.75	.5892	-.27	2.49	-.1369	-.1369	.0293	.0187	3.01	.0195	-11.93	3.01	.0195	-.28	2.49
36	-11.44	3.79	.5080	-.25	2.48	-.0906	-.0906	.0197	-.0038	3.21	.0361	-11.97	3.21	.0361	-.27	2.50
48	-11.30	3.85	.4573	-.27	2.49	-.0328	-.0328	.0275	-.0134	3.31	.0386	-12.01	3.31	.0386	-.27	2.51
60	-11.18	3.87	.4178	-.27	2.49	-.0833	-.0833	.0195	-.0477	3.38	.0498	-12.04	3.38	.0498	-.26	2.50
72	-11.03	3.89	.3637	-.29	2.50	.0050	.0050	.0127	.0090	3.47	.0267	-12.06	3.47	.0267	-.28	2.51

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION DESIGN - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALPH - 24 (KM)
 ALPHA ANGLE - 90.0

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (Y,YP)	S.D. (XP,Y)	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	-12.39	3.90				.0595	-1.45	2.62	300								
12	-12.26	3.94	.5089	-1.42	2.60		-.0072	.0653	.0219		.0710		-12.43	3.09	.0585	-.45	2.62
24	-12.16	3.95	.6177	-1.45	2.60		.2201	.0595	.0495		.0793		-12.49	3.06	.0256	-.46	2.56
36	-12.03	3.98	.6247	-1.43	2.61		-.0252	.0535	.0373		.0575		-12.54	3.32	.0475	-.46	2.62
48	-11.90	4.02	.4849	-1.44	2.62		.0260	.0446	-.0462		.0561		-12.59	3.41	.0927	-.44	2.62
60	-11.75	4.07	.4415	-1.44	2.63		-.0354	.0382	.0396		.0341		-12.63	3.50	.0481	-.47	2.62
72	-11.61	4.07	.3998	-1.45	2.64		-.0382	.0401	-.0168		.0149		-12.55	3.57	.0722	-.44	2.62

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
-12.32	-.48						

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STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 25
ALPHA ANGLE - 90.0

$$\begin{matrix} X & Y \\ = & = \\ U(A^T) & V(A^T) \\ T) & T) \end{matrix}$$
$$\begin{array}{l} \text{XP} = \text{U(AT T} \rightarrow \text{CT)} \\ \text{YP} = \text{V(AT T} \rightarrow \text{CT)} \end{array}$$
QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	
	-12.99	4.20	.0619	-.65	2.76	950	-12.80	-.70	
OT HR	MEAN XP	S.D. XP	MEAN YP	R (Y,YP)	S.D. YP	R (YP,X)	S.D. XP	MEAN YP	S.D. YP
12	-12.84	4.23	-.63	.0701	2.77	.0983	3.25	-.66	2.76
24	-12.70	4.23	-.61	.1798	2.76	.1174	3.29	-.67	2.72
36	-12.52	4.26	-.61	-.0118	2.75	.1309	3.29	-.65	2.76
48	-12.37	4.29	-.60	.0842	2.76	.1120	3.65	-.66	2.76
60	-12.18	4.30	-.62	-.0670	2.77	.0171	3.73	-.66	2.76
72	-12.05	4.30	-.62	-.0027	2.77	.0520	3.83	-.68	2.76

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12568) - CARL KENNEDY
 MONTH OF RECORD - SEPTEMBER
 DATE OF RECORD - 1965 - 12-70
 DISTANCE (KM) - 25
 ALPHA ANGLE - 90.0
 X = VIAT T)
 Y = VIAT T)
 XP = VIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-13.15	4.63	.6373	-.95	2.68	.0753	-.93	2.66	900	-13.34	3.58	.0713	-.94	2.63
24	-13.02	4.64	.6332	-.94	2.67					-13.43	3.57	.0432	-.94	2.60
36	-12.82	4.56	.5573	-.92	2.66					-13.53	3.85	.0893	-.94	2.66
48	-12.65	4.69	.5447	-.91	2.64					-13.51	3.86	.0514	-.95	2.65
60	-12.45	4.71	.4242	-.82	2.65					-13.56	4.11	.0867	-.93	2.65
72	-12.23	4.73	.4524	-.73	2.63					-13.71	4.12	.0368	-.98	2.64

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112853 - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/55 - 12/73
 NUMBER OF RECORDS - 27
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	-13.37	5.13	-0.414	-1.02	3.32	900	-13.23	3.88	-0.833	-1.01	2.97	-0.833	-13.23	3.88	-0.833	-1.01	2.97
36	48	-12.75	5.15	-0.414	-0.116	3.32	900	-13.23	3.79	-0.859	-1.02	3.02	-0.859	-13.23	3.79	-0.859	-1.02	3.02
60	72	-12.55	5.16	-0.414	-0.0127	3.32	900	-13.23	4.13	-0.826	-1.01	3.02	-0.826	-13.23	4.13	-0.826	-1.01	3.02
72		-12.40	5.21	-0.414	-0.0189	3.32	900	-13.23	4.40	-0.845	-1.02	3.02	-0.845	-13.23	4.40	-0.845	-1.02	3.02
									4.35	-0.849	-1.01	3.02	-0.849	-13.23	4.35	-0.849	-1.01	3.02

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112853 - CAPE VERDEY X = 11.17
 MONTH OF RECORD - OCTOBER Y = 11.17
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 100
 ALPHA ANGLE - 90.0
 XP = 11.17
 YP = 11.17

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	R (XP,Y)	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	R (XP,Y)	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	R (XP,Y)
12	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390
24	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390
36	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390
48	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390
60	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390
72	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390	-1.13	3.13	.0391	-1.19	2.89	930	-1.13	3.13	.0391	-1.19	2.89	.0390

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	R (XP,Y)
12	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390
24	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390
36	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390
48	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390
60	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390
72	-1.16	3.19	.0349	-1.18	2.85	930	-1.13	3.13	.0391	-1.19	2.89	.0390

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STUDENT'S T-TEST - CASE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALPHA ANGLE - 90.0
 Y = VIAT T
 YP = VIAT T + DT
 YP = VIAT T + DT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	R (XP, Y)	F (YP, X)	MEAN YP	S.D. YP
12	-2.00	5.03	.737	-1.13	5.15	.131	-1.15	5.14	330	-1.53	3.55	.1286	.2916	.0157	-1.25	3.42
24	-1.96	5.12	.571	-1.25	5.15					-1.73	4.75	.1793	.2972	.0273	-1.15	4.26
36	-1.92	5.15	.375	-1.31	5.17					-1.85	5.00	.1831	.2357	.0235	-1.12	4.82
48	-1.86	5.23	.199	-1.35	5.18					-1.94	5.24	.1844	.1601	.0335	-1.12	5.03
60	-1.81	5.29	.1078	-1.37	5.18					-1.98	5.33	.1878	.0742	.0303	-1.14	5.12
72	-1.74	5.36	.0427	-1.44	5.17					-2.01	6.01	.1856	.0404	.0192	-1.14	5.12

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
-1.55	-1.42

DIAGNOSTIC AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1958) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1956 - 1970
 ALPHAS - 2
 ALPHA VALUE - 90.0

X = YAT Y
 Y = YAT Y

XP = YAT Y (DT)
 YP = YAT Y (DT)

DIAGNOSTIC NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	DIAGNOSTIC NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
48	6.22	6.22	.2327	-.21	4.83	930	.90	-.42
DT	DIAGNOSTIC NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP
12	.45	5.35	.7755	-.25	4.35	.6757	.81	3.88
24	.49	5.32	.5515	-.30	4.35	.5185	.72	4.36
36	.53	5.30	.3522	-.32	4.37	.3245	.52	5.84
48	.60	5.21	.2524	-.35	4.38	.2147	.54	5.97
60	.67	5.11	.1857	-.37	5.03	.0348	.50	6.10
72	.73	5.68	.1097	-.40	5.05	.0714	.47	6.16
DT	DIAGNOSTIC NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP
12	.45	5.35	.7755	-.25	4.35	.6757	.81	3.88
24	.49	5.32	.5515	-.30	4.35	.5185	.72	4.36
36	.53	5.30	.3522	-.32	4.37	.3245	.52	5.84
48	.60	5.21	.2524	-.35	4.38	.2147	.54	5.97
60	.67	5.11	.1857	-.37	5.03	.0348	.50	6.10
72	.73	5.68	.1097	-.40	5.05	.0714	.47	6.16

QUADRARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12553) - CAPE KENEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/53 - 12/70
 ALTITUDE (FT) - 3
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN
 X 2.36
 S.D.
 X 6.33
 R
 (X, Y) .2111
 MEAN
 Y .27
 S.D.
 Y 4.98
 N 930

MEAN
 XP 2.39
 S.D.
 XP 6.36
 R
 (X, XP) .8331
 MEAN
 YP 2.43
 S.D.
 YP 4.97
 R
 (Y, YP) .7053
 MEAN
 XP 2.48
 S.D.
 XP 6.43
 R
 (XP, YP) .2071
 MEAN
 YP 2.57
 S.D.
 YP 5.01
 R
 (YP, X) .0697

MEAN
 XP 2.74
 S.D.
 XP 6.70
 R
 (XP, YP) .2766
 MEAN
 YP 2.74
 S.D.
 YP 5.13
 R
 (YP, X) .0677

MEAN
 XP 2.39
 S.D.
 XP 6.36
 R
 (X, XP) .8331
 MEAN
 YP 2.43
 S.D.
 YP 4.97
 R
 (Y, YP) .7053
 MEAN
 XP 2.48
 S.D.
 XP 6.43
 R
 (XP, YP) .2071
 MEAN
 YP 2.57
 S.D.
 YP 5.01
 R
 (YP, X) .0697

DT
 12
 24
 36
 48
 60
 72

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T - DT)
 YP = VIAT T - DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	4.03	6.51	.8031	.23	5.19	.7262	.38	5.19	930	.2883	.0344	4.25	3.81	.0929	.42	3.48
24	4.09	6.55	.6332	.23	5.18	.5245				.2753	-.0288	4.15	4.88	.1628	.44	4.32
36	4.16	6.56	.4805	.19	5.18	.3232				.2235	-.0752	4.06	5.57	.1823	.43	4.84
48	4.25	6.61	.3686	.15	5.28	.2095				.1470	-.0810	4.00	5.93	.2035	.41	5.04
60	4.39	6.67	.2659	.15	5.38	.1336				.1019	-.0760	3.95	6.14	.2029	.39	5.13
72	4.52	6.77	.2264	.14	5.40	.0909				.0727	-.0714	3.92	6.26	.2037	.38	5.16

GIVEN
X
4.35

GIVEN
Y
.29

CLASBIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112553 - CAPE WENEDY
 PERIOD OF RECORD - 30 YR
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FPM) - 5
 ALPHA ANGLE - 53.0

X = U(1AT 7)
 Y = U(1AT 7)

XP = U(1AT 7 + DT)
 YP = U(1AT 7 + DT)

CLASBIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	CLASBIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	5.67	6.83	.2566	.26	5.76	930	6.03	.27
DT	CLASBIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP
12	5.74	6.82	.7334	.15	5.77	.7298	5.91	4.03
24	5.81	6.84	.6401	.03	5.77	.5144	5.80	5.17
36	5.90	6.85	.4393	.05	5.78	.3409	5.71	5.83
48	6.01	6.87	.2272	.02	5.80	.2116	5.64	5.21
60	6.16	6.92	.0773	-.03	5.84	.1311	5.50	6.45
72	6.33	7.05	.2528	-.01	6.01	.0814	5.56	6.56
DT	CLASBIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN YP	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (YP,X)	MEAN YP	S.D. YP
12	5.74	6.82	.7334	.15	5.77	.7298	5.91	4.03
24	5.81	6.84	.6401	.03	5.77	.5144	5.80	5.17
36	5.90	6.85	.4393	.05	5.78	.3409	5.71	5.83
48	6.01	6.87	.2272	.02	5.80	.2116	5.64	5.21
60	6.16	6.92	.0773	-.03	5.84	.1311	5.50	6.45
72	6.33	7.05	.2528	-.01	6.01	.0814	5.56	6.56

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112858 - CAPE MENNES
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/73
 ALTITUDE (MM) - 6
 ALPHA ANGLE - 50.0

X = U1AT T1
 Y = V1AT T1

XP = U1AT T + DT1
 YP = V1AT T + DT1

QUADRIVARIATE NORMAL STATISTICS OF Y, YP, XP

DF	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN Y	S.D. Y	MEAN XP	S.D. XP	MEAN YP	S.D. YP	MEAN YP	S.D. YP
12	7.51	7.42	.8250	.21	6.48	.7163	.31	6.45	935	.31	6.45	7.63	7.63	7.63	7.63	7.63	7.63
24	7.50	7.43	.8554	.15	6.53	.7131											
36	7.72	7.46	.8213	.11	6.57	.7322											
48	7.87	7.49	.7894	.09	6.57	.7179											
60	8.04	7.57	.7488	.07	6.77	.7477											
72	8.22	7.71	.7031	.07	6.78	.7245											

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (YP, YP)	MEAN YP	S.D. YP
7.63	7.63	.1748	7.63	7.63	.1748	7.63	7.63
		.2250			.2250		
		.2524			.2524		
		.2532			.2532		
		.2547			.2547		
		.2587			.2587		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - .2/70
 ALTITUDE (KM) - 7
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	9.54	8.37	.7961	.20	7.46	.7159	.27	7.40	930	.2957	.1343	9.64	9.05	.1391	.47	5.09
24	9.66	8.36	.6321	.14	7.54	.4889				.2593	.0555	9.50	6.44	.2003	.43	6.37
36	9.81	8.35	.5140	.10	7.61	.3252				.1857	.0180	9.38	7.13	.2368	.37	6.95
48	9.99	8.39	.4396	.10	7.76	.2320				.1521	.0226	9.30	7.48	.2407	.33	7.17
60	10.18	8.46	.3762	.10	7.93	.1791				.1465	.0098	9.24	7.73	.2329	.29	7.24
72	10.38	8.58	.3127	.12	7.91	.1488				.1472	.0013	9.21	7.93	.2311	.25	7.27

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
9.62	.44

QUADRANTATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, ZP, RP

STATION 2283 - JET KENNEDY
 DATE OF RECORD - 10/28/68
 DATE OF RECORD - 12/70
 NAME OF RECORD - 3
 ALPHA VALUE - 0.03

QUADRANTATE NORMAL STATISTICS OF X, Y, ZP, RP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR ZP AND RP									
ST	MEAN X	S.D. X	P X,Y	MEAN Y	S.D. Y	N	MEAN ZP	S.D. ZP	P ZP,Y	MEAN RP	S.D. RP	P RP,Y	MEAN ZP	S.D. ZP	P ZP,RP	MEAN RP	S.D. RP	P RP,RP	S.D. RP
12	11.77	3.40	.2432	.37	8.53	320													
24	11.23	3.75	.21	.30	8.53	320	7320	.2513	.2035	.33	5.37	.1525	.33	5.37	.1525	.33	5.37	.1525	5.77
36	12.02	3.73	.21	.4993	.2412	320	4993	.2412	.2113	.34	5.36	.2412	.34	5.36	.2412	.34	5.36	.2412	7.32
48	12.17	3.71	.20	.3433	.2525	320	3433	.2525	.1737	.35	5.35	.2525	.35	5.35	.2525	.35	5.35	.2525	7.37
60	12.23	3.75	.20	.2566	.2567	320	2566	.2567	.1513	.36	5.34	.2567	.36	5.34	.2567	.36	5.34	.2567	8.20
72	12.61	3.41	.23	.2058	.2345	320	2058	.2345	.1513	.37	5.33	.2345	.37	5.33	.2345	.37	5.33	.2345	8.30
84	12.84	3.37	.27	.1642	.2333	320	1642	.2333	.1494	.38	5.32	.2333	.38	5.32	.2333	.38	5.32	.2333	8.37

TABLES OF THE BIVARIATE NORMAL DISTRIBUTION

TABLES OF THE BIVARIATE NORMAL DISTRIBUTION
 WITH MEANS μ_1, μ_2 AND STANDARD DEVIATIONS σ_1, σ_2
 AND CORRELATION COEFFICIENT ρ
 TABLES OF THE BIVARIATE NORMAL DISTRIBUTION
 WITH MEANS μ_1, μ_2 AND STANDARD DEVIATIONS σ_1, σ_2
 AND CORRELATION COEFFICIENT ρ

TABLES OF THE BIVARIATE NORMAL DISTRIBUTION									
TABLES OF THE BIVARIATE NORMAL DISTRIBUTION					TABLES OF THE BIVARIATE NORMAL DISTRIBUTION				
μ_1	μ_2	σ_1	σ_2	ρ	μ_1	μ_2	σ_1	σ_2	ρ
1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	0.0
1.0	1.0	1.0	1.0	0.1	1.0	1.0	1.0	1.0	0.1
1.0	1.0	1.0	1.0	0.2	1.0	1.0	1.0	1.0	0.2
1.0	1.0	1.0	1.0	0.3	1.0	1.0	1.0	1.0	0.3
1.0	1.0	1.0	1.0	0.4	1.0	1.0	1.0	1.0	0.4
1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0	1.0	0.5
1.0	1.0	1.0	1.0	0.6	1.0	1.0	1.0	1.0	0.6
1.0	1.0	1.0	1.0	0.7	1.0	1.0	1.0	1.0	0.7
1.0	1.0	1.0	1.0	0.8	1.0	1.0	1.0	1.0	0.8
1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	0.9
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

DIAGONAL AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, ZP, YP

STATION (12022) - CAPE KENNEDY
 MONTH OF RECORDS - OCTOBER
 PERIOD OF RECORDS - 1955 - 1970
 ALTITUDE - 10
 ALPHA ANGLE - 50.0

X - UAT (1)
 Y - UAT (2)
 ZP - UAT (3)
 YP - UAT (4)

DIAGONAL BIVARIATE NORMAL STATISTICS OF X, Y, ZP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR ZP AND YP

ZP	YP	DIAGONAL BIVARIATE NORMAL STATISTICS OF X, Y, ZP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR ZP AND YP			
		MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
		15.45	12.50	2.73	.77	11.85	930	15.85	1.08
ZP	YP	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN ZP	S.D. ZP
		15.56	11.35	.73	.77	11.37	1170	15.54	5.45
		15.72	11.34	.73	.77	11.37	1170	15.54	5.45
		15.88	11.34	.73	.77	11.37	1170	15.54	5.45
		16.04	11.34	.73	.77	11.37	1170	15.54	5.45
		16.20	11.34	.73	.77	11.37	1170	15.54	5.45
ZP	YP	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP
		16.36	11.34	.73	.77	11.37	1170	15.54	5.45
		16.52	11.34	.73	.77	11.37	1170	15.54	5.45
		16.68	11.34	.73	.77	11.37	1170	15.54	5.45
		16.84	11.34	.73	.77	11.37	1170	15.54	5.45
		17.00	11.34	.73	.77	11.37	1170	15.54	5.45

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/73
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP											
DT	HR	MEAN XP	S.D. XP	R (X, XP)	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. YP
12	18.93	13.04	.8573	.71	13.11	.1921	.67	13.39	930	18.91	8.75
24	19.12	13.01	.7298	.65						18.74	8.96
36	19.37	12.99	.6143	.62						18.58	10.33
48	19.70	13.00	.5211	.64						18.41	11.16
60	20.05	13.00	.4433	.72						18.33	11.73
72	20.34	13.11	.3863	.76						18.25	12.07

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y	R (XP, YP)	MEAN YP	S.D. YP
19.12	.95	.1141	.87	8.04
		.1631	.94	10.76
		.1653	.79	12.06
		.1622	.71	12.82
		.1618	.63	12.88
		.1663	.59	12.93

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1129581 - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MFT) - 12
 ALPHA ANGLE - 30.0

X = U/IAT T)
 Y = V/IAT T)
 XP = U/IAT T + DT)
 YP = V/IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	S.D. Y	N	MEAN Y	R (X,Y)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	20.83	13.23	.8587	.51	14.24	.8358	.2108	.1920	930	.46	.2025	20.64	.68	.60	7.75
24	20.82	13.17	.7469	.51	14.33	.7461	.2115	.1738						.56	10.74
36	21.06	13.12	.6360	.50	14.53	.4893	.2125	.1564						.51	12.29
48	21.40	13.14	.5482	.51	14.78	.3701	.2227	.1510						.45	13.07
60	21.72	13.16	.4675	.57	15.12	.2863	.2371	.1572						.37	13.46
72	22.07	13.22	.4057	.62	15.23	.2424	.2465	.1464						.33	13.84

STATION (12859) - CAPE KENNEDY
MONTH OF RECORD - OCTOBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 13
ALPHA ANGLE - 93.0

X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT)
YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
20.64	12.97	.2279	-27	13.05	930	20.70	-.15
MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. XP
20.82	12.89	.8568	24	13.17	.8415	.1345	6.69
21.03	12.81	.7451	24	13.26	.6822	.1800	6.69
21.30	12.76	.6405	24	13.32	.5319	.1928	6.69
21.64	12.79	.5533	24	13.71	.4112	.1136	6.69
21.96	12.86	.4881	24	14.05	.3251	.0936	6.69
22.30	12.92	.4276	24	14.14	.2714	.0856	6.69
MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP
20.82	12.89	.8568	24	13.17	.8415	.1345	20.53
21.03	12.81	.7451	24	13.26	.6822	.1800	20.39
21.30	12.76	.6405	24	13.32	.5319	.1928	20.25
21.64	12.79	.5533	24	13.71	.4112	.1136	20.10
21.96	12.86	.4881	24	14.05	.3251	.0936	20.00
22.30	12.92	.4276	24	14.14	.2714	.0856	19.94
MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP
20.82	12.89	.8568	24	13.17	.8415	.1345	20.53
21.03	12.81	.7451	24	13.26	.6822	.1800	20.39
21.30	12.76	.6405	24	13.32	.5319	.1928	20.25
21.64	12.79	.5533	24	13.71	.4112	.1136	20.10
21.96	12.86	.4881	24	14.05	.3251	.0936	20.00
22.30	12.92	.4276	24	14.14	.2714	.0856	19.94

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	19.03	11.95	.2371	-85	10.83	930	18.90	-.77
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	19.23	11.91	.6472	-.83	10.93	.6320	18.75	6.35
24	19.47	11.84	.7301	-.81	10.97	.6864	18.60	8.16
36	19.70	11.81	.6225	-.82	11.17	.5417	18.51	9.34
48	20.04	11.78	.5462	-.81	11.40	.4228	18.37	9.99
60	20.28	11.78	.4763	-.76	11.70	.3430	18.33	10.49
72	20.59	11.83	.4181	-.68	11.78	.2881	18.29	10.84
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	19.23	11.91	.6472	-.83	10.93	.6320	18.75	6.35
24	19.47	11.84	.7301	-.81	10.97	.6864	18.60	8.16
36	19.70	11.81	.6225	-.82	11.17	.5417	18.51	9.34
48	20.04	11.78	.5462	-.81	11.40	.4228	18.37	9.99
60	20.28	11.78	.4763	-.76	11.70	.3430	18.33	10.49
72	20.59	11.83	.4181	-.68	11.78	.2881	18.29	10.84
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	19.23	11.91	.6472	-.83	10.93	.6320	18.75	6.35
24	19.47	11.84	.7301	-.81	10.97	.6864	18.60	8.16
36	19.70	11.81	.6225	-.82	11.17	.5417	18.51	9.34
48	20.04	11.78	.5462	-.81	11.40	.4228	18.37	9.99
60	20.28	11.78	.4763	-.76	11.70	.3430	18.33	10.49
72	20.59	11.83	.4181	-.68	11.78	.2881	18.29	10.84

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12869) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	15.81	10.19	.2427	-.82	8.51	930	15.69	-.69
	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (XP, Y)	MEAN XP	S.D. XP
12	16.02	10.16	.0526	-.82	8.60	.2828	15.53	5.32
24	16.26	10.15	.7404	-.83	8.67	.2632	15.37	6.82
36	16.48	10.13	.6255	-.77	8.82	.2359	15.29	7.91
48	16.75	10.12	.5417	-.77	9.02	.2077	15.20	8.52
60	16.99	10.12	.4432	-.71	9.26	.1750	15.19	9.07
72	17.26	10.19	.3370	-.66	9.33	.1399	15.16	9.32
	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	16.02	10.16	.2454	-.82	8.60	.1732	-.75	4.95
24	16.26	10.15	.2486	-.83	8.67	.1236	-.79	6.33
36	16.48	10.13	.2561	-.77	8.82	.0556	-.86	7.22
48	16.75	10.12	.2712	-.77	9.02	.0673	-.89	7.72
60	16.99	10.12	.2834	-.71	9.26	.0548	-.92	8.07
72	17.26	10.19	.3000	-.66	9.33	.0497	-.93	8.23

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENYON
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/58 - 2/70
 ALTITUDE (KH) - 16
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	11.57	8.34	.8441	-.73	6.59	.2566	-.72	6.53	930	.1724	11.17	4.46	.1070	-.69	4.05
24	11.74	8.34	.7553	-.71	6.63					.1095	11.05	5.43	.1832	-.73	4.34
36	11.99	8.34	.6439	-.70	6.77					.0862	10.93	6.35	.1871	-.78	5.63
48	12.20	8.40	.5639	-.68	6.96					.0742	10.87	6.87	.2072	-.82	5.96
60	12.45	8.47	.4910	-.62	7.15					.0774	10.82	7.26	.2127	-.84	6.22
72	12.66	8.53	.4385	-.58	7.24					.0733	10.79	7.50	.2267	-.84	6.32

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (195863) - CAPE KENNEDY
 DATE OF OBSERV - OCTOBER
 TIME OF OBSERV - 1.55 - 12/70
 ALTITUDE (MM) - 17
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
12	7.01	7.04	.8132	-.41	4.79	.6321	-.39	4.76	930
24	7.17	7.05	.7005	-.73	4.84	.5916			
36	7.33	7.07	.5535	-.70	4.92	.3676			
48	7.52	7.11	.3915	-.35	5.05	.3197			
60	7.67	7.14	.2503	-.34	5.11	.1813			
72	7.85	7.17	.1462	-.33	5.20	.1741			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
6.84	-.32		6.71	4.07	.0522	-.36	3.62
			6.58	4.53	.1463	-.39	3.76
			6.51	5.25	.1548	-.44	4.32
			6.43	5.63	.1994	-.47	4.43
			6.41	6.02	.2240	-.48	4.62
			6.36	6.23	.2433	-.48	4.65

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12899) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 18
 ALPHA ANGLE - 99.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	2.96	5.84	.2876	-.41	3.65	930	3.00	-.42
DT HR	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. YP
12	3.09	5.87	.7652	-.39	.67	.4963	.2928	2.83
24	3.23	5.88	.7457	-.37	3.70	.5198	.2939	2.79
36	3.35	5.91	.6247	-.38	3.75	.2482	.2827	2.75
48	3.49	5.92	.5822	-.35	3.84	.2228	.2856	2.68
60	3.60	5.96	.4923	-.31	3.89	.0375	.2925	2.67
72	3.77	6.01	.4578	-.28	3.95	.0738	.2973	2.61

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

X = UAT (I)

Y = VIAT (I)

XP = UAT (I + 57)

YP = VIAT (I + 57)

STATION 12558 - CAPE KENNEDY

MONTH OF RECORD - OCTOBER

PERIOD OF RECORD - 1956 - 1970

ALPHA DEGREE - 13

ALPHA ANGLE - 90.0

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

GIVEN X

GIVEN Y

N

S.D. Y

MEAN Y

P (X, Y)

S.D. X

MEAN X

P (X, YP)

MEAN YP

S.D. YP

MEAN XP

S.D. XP

P (XP, YP)

MEAN YP

S.D. YP

P (XP, Y)

MEAN YP

S.D. YP

P (XP, Y)

MEAN YP

S.D. YP

P (XP, Y)

MEAN YP

S.D. YP

DT

12

24

36

48

60

72

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128881) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 20
 ALPHA ANGLE - 90.0

X = U(AT, T)
 Y = V(AT, T)
 XP = U(AT, T + DT)
 YP = V(AT, T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT																		
12	-1.68	4.61	.1544	-.31	2.85	930												
24																		
36																		
48																		
60																		
72																		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12883) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 21
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-2.53	4.35	.6272	-.38	2.70	.1013	-.39	2.70	930	.0597	-2.80	3.36	.1686	-.40	2.68
24	-2.40	4.38	.6056	-.33	2.70	.3691				.1104	-2.90	3.14	.1294	-.41	2.51
36	-2.28	4.43	.5527	-.40	2.71	.0356				.0630	-2.91	3.60	.1615	-.40	2.69
48	-2.14	4.50	.5655	-.33	2.76	.1090				.0566	-2.99	3.56	.1681	-.40	2.68
60	-2.05	4.55	.4937	-.37	2.80	-.0479				.0251	-2.99	3.75	.1804	-.40	2.70
72	-1.90	4.63	.4747	-.36	2.79	-.0514				.0296	-3.03	3.80	.1763	-.40	2.69

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: 12859 - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE - 22
 ALPHA ANGLE - 90.0

X = V(A,T)
 Y = V(A,T)

XP = V(A,T + DT)
 YP = V(A,T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N
	-3.26	4.36	.0942	-1.52	2.81	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

DT HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-3.13	4.37	.5531	-1.50	2.80	.1905	.0554	-1.905	2.80	930	-3.45	3.28	.0253	-1.54	2.76
24	-2.97	4.43	.6986	-1.51	2.83	.3369	.0802	.3369	3.12		-3.57	3.12	.0133	-1.57	2.64
36	-2.83	4.47	.5996	-1.50	2.81	.0988	.0802	.0988	3.48		-3.51	3.48	.0613	-1.53	2.61
48	-2.70	4.56	.5687	-1.53	2.81	.1194	.1043	.1194	3.52		-3.57	3.52	.0745	-1.52	2.79
60	-2.58	4.58	.5561	-1.49	2.83	-.0832	.1009	-.0832	3.75		-3.57	3.75	.0907	-1.50	2.80
72	-2.46	4.63	.4814	-1.50	2.83	-.0055	.1029	-.0055	3.81		-3.70	3.81	.0928	-1.50	2.81

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12952) - CAPE KENNEDY
 MONTH OF RECORD - 10, 1968
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 23
 AZIMUTH ANGLE - 90.0

X = U/VAT T)
 Y = V/VAT T)

XP = U/VAT T + DT)
 YP = V/VAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-3.55	4.68	.6751	-1.43	2.77	.0639	-1.50	2.75	930	-3.68	4.63	.0639	-1.50	2.75
24	-3.37	4.72	.5782	-1.50	2.77									
36	-3.21	4.79	.6123	-1.51	2.77									
48	-3.08	4.85	.5744	-1.50	2.78									
60	-2.92	4.91	.5629	-1.48	2.80									
72	-2.73	4.96	.4733	-1.48	2.82									

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	-3.55	4.68	.0639	-1.43	2.77	-3.68	-1.50
24	-3.37	4.72		-1.50			
36	-3.21	4.79		-1.51			
48	-3.08	4.85		-1.50			
60	-2.92	4.91		-1.48			
72	-2.73	4.96		-1.48			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 24
 ALPHA ANGLE - 90.0

X = UAT (°)
 Y = VAT (°)

XP = UAT (°)
 YP = VAT (°)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X -3.72
 S.D. Y 4.86
 P (X, Y) 5535
 MEAN Y -1.46
 S.D. Y 2.78
 N 930

DP	MEAN XP	S.D. YP	P (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN YP	S.D. YP	R (YP, YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-3.57	4.91	.7231	-1.46	2.77	.1923	.0557	.0275	.0855	-3.83	3.32	.0416	-3.80	-1.45	-4.45	2.72
24	-3.38	4.96	.7026	-1.44	2.73	.2704	.0576	.0269	.0751	-4.02	3.25	.0394	-3.80	-1.45	-4.45	2.67
36	-3.22	5.03	.6823	-1.43	2.73	.0095	.0537	.0421	.0311	-4.07	3.73	.1041	-3.80	-1.45	-4.45	2.77
48	-3.06	5.13	.6645	-1.41	2.81	.0151	.0783	.0443	.0737	-4.14	3.87	.1021	-3.80	-1.45	-4.45	2.77
60	-2.91	5.20	.6523	-1.39	2.82	.0881	.1010	.0730	.0819	-4.16	4.11	.1126	-3.80	-1.43	-4.43	2.76
72	-2.74	5.25	.6082	-1.38	2.84	.0776	.1038	.0831	.0753	-4.22	4.19	.1137	-3.80	-1.42	-4.42	2.76

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X -3.72
 S.D. Y 4.86
 P (X, Y) 5535
 MEAN Y -1.46
 S.D. Y 2.78
 N 930

DP	MEAN XP	S.D. YP	P (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN YP	S.D. YP	R (YP, YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-3.57	4.91	.7231	-1.46	2.77	.1923	.0557	.0275	.0855	-3.83	3.32	.0416	-3.80	-1.45	-4.45	2.72
24	-3.38	4.96	.7026	-1.44	2.73	.2704	.0576	.0269	.0751	-4.02	3.25	.0394	-3.80	-1.45	-4.45	2.67
36	-3.22	5.03	.6823	-1.43	2.73	.0095	.0537	.0421	.0311	-4.07	3.73	.1041	-3.80	-1.45	-4.45	2.77
48	-3.06	5.13	.6645	-1.41	2.81	.0151	.0783	.0443	.0737	-4.14	3.87	.1021	-3.80	-1.45	-4.45	2.77
60	-2.91	5.20	.6523	-1.39	2.82	.0881	.1010	.0730	.0819	-4.16	4.11	.1126	-3.80	-1.43	-4.43	2.76
72	-2.74	5.25	.6082	-1.38	2.84	.0776	.1038	.0831	.0753	-4.22	4.19	.1137	-3.80	-1.42	-4.42	2.76

QUADEVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112858) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADEVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADEVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	-3.39	5.21	.0845	-.95	2.92	930	-3.37	-.51
DT HR	QUADEVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. YP
12	-3.21	5.30	.7535	-.55	2.91	.0894	-3.50	2.82
24	-3.01	5.39	.7406	-.54	2.93	.1077	-3.64	2.78
36	-2.82	5.49	.6602	-.51	2.95	.1325	-3.73	2.91
48	-2.63	5.59	.6251	-.48	2.98	.1511	-3.82	2.91
60	-2.45	5.71	.5731	-.45	3.02	.1761	-3.87	2.91
72	-2.27	5.75	.5331	-.46	3.06	.1783	-3.92	2.91

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 26
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
12	-2.55	5.89	.8051	-.59	3.04	.2128	-.64	3.06	930
24	-2.31	5.98	.7869	-.60	3.07	.2778			
36	-2.13	6.03	.7209	-.59	3.10	.0484			
48	-1.91	6.20	.6720	-.55	3.14	.0733			
60	-1.69	6.31	.6213	-.53	3.17	-.0583			
72	-1.47	6.39	.5906	-.54	3.23	.0105			

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
GIVEN X	-2.77	3.44	.1045	-.67	2.98
GIVEN Y	-2.94	3.59	.0841	-.68	2.93
	-3.05	4.04	.1534	-.66	3.05
	-3.16	4.31	.1545	-.67	3.05
	-3.24	4.56	.1599	-.66	3.05
	-3.33	4.70	.1703	-.66	3.06

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 27
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-1.96	6.16	.1192	-.76	3.23	930													
24																			
36																			
48																			
60																			
72																			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-1.71	6.25	.7940	-.71	3.21	.1192	-.76	3.23	930	-2.33	-.89	.1340	-2.44	3.75	.1340	-.81	3.16
24	-1.49	6.41	.7912	-.71	3.22							.0957	-2.60	3.77	.0957	-.83	3.06
36	-1.25	6.55	.7321	-.68	3.26							.1463	-2.70	4.20	.1463	-.78	3.22
48	-1.01	6.66	.6847	-.67	3.33							.1274	-2.80	4.49	.1274	-.80	3.21
60	-.79	6.78	.6149	-.65	3.34							.1596	-2.82	4.85	.1596	-.75	3.22
72	-.57	6.89	.5806	-.68	3.39							.1421	-2.88	5.02	.1421	-.77	3.23

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12868) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
10	1/56 - 12/70	0	90.0	-1.16	3.18	.0349	-1.18	2.89	930
10	1/56 - 12/70	1	90.0	-2.02	6.02	.1913	-1.15	5.14	930
10	1/56 - 12/70	2	90.0	.46	6.20	.2327	-.21	4.89	930
10	1/56 - 12/70	3	90.0	2.36	6.33	.2111	.27	4.98	930
10	1/56 - 12/70	4	90.0	3.99	6.49	.2022	.38	5.19	930
10	1/56 - 12/70	5	90.0	5.67	6.83	.2566	.26	5.76	930
10	1/56 - 12/70	6	90.0	7.41	7.41	.2589	.31	6.46	930
10	1/56 - 12/70	7	90.0	9.43	8.40	.2499	.27	7.40	930
10	1/56 - 12/70	8	90.0	11.77	9.40	.2493	.37	8.53	930
10	1/56 - 12/70	9	90.0	14.15	10.74	.2389	.55	10.01	930
10	1/56 - 12/70	10	90.0	16.40	12.00	.2173	.77	11.95	930
10	1/56 - 12/70	11	90.0	18.75	13.11	.1921	.67	13.39	930
10	1/56 - 12/70	12	90.0	20.41	13.28	.2025	.46	14.12	930
10	1/56 - 12/70	13	90.0	20.64	12.97	.2279	-.27	13.05	930
10	1/56 - 12/70	14	90.0	19.03	11.96	.2371	-.85	10.83	930
10	1/56 - 12/70	15	90.0	15.81	10.19	.2427	-.82	8.51	930
10	1/56 - 12/70	16	90.0	11.38	8.36	.2556	-.72	6.53	930
10	1/56 - 12/70	17	90.0	6.85	7.02	.2857	-.39	4.76	930
10	1/56 - 12/70	18	90.0	2.56	5.84	.2876	-.41	3.65	930
10	1/56 - 12/70	19	90.0	.12	5.00	.2016	-.45	2.11	930
10	1/56 - 12/70	20	90.0	-1.68	4.61	.1544	-.31	2.85	930
10	1/56 - 12/70	21	90.0	-2.65	4.32	.1694	-.39	2.70	930
10	1/56 - 12/70	22	90.0	-3.26	4.36	.0642	-.52	2.81	930
10	1/56 - 12/70	23	90.0	-3.68	4.63	.0639	-.50	2.75	930
10	1/56 - 12/70	24	90.0	-3.72	4.86	.0535	-.46	2.78	930
10	1/56 - 12/70	25	90.0	-3.39	5.21	.0845	-.55	2.92	930
10	1/56 - 12/70	26	90.0	-2.75	5.83	.1502	-.64	3.06	930
10	1/56 - 12/70	27	90.0	-1.96	6.16	.1192	-.76	3.23	930

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 0
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	.04	2.90	-.2098	-1.11	2.82	900	-.10	-1.16
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP
12	.09	2.91	.5329	-1.13	2.82	.0918	-.05	2.40
24	.10	2.93	.4102	-1.16	2.81	.1710	-.03	2.61
36	.09	2.94	.1626	-1.18	2.82	.1865	.01	2.86
48	.07	2.94	.1197	-1.19	2.82	.1539	.02	2.88
60	.06	2.92	-.0120	-1.18	2.83	.0759	.04	2.93
72	.06	2.90	.0374	-1.16	2.84	.0109	.03	2.89
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)	MEAN YP	S.D. YP
12	.09	2.91	-.2061	.5071	.0918	-.2953	-1.16	2.36
24	.10	2.93	-.2126	.2590	.1710	-.2371	-1.16	2.64
36	.09	2.94	-.2122	.0727	.1865	-.1101	-1.15	2.75
48	.07	2.94	-.2176	-.0109	.1539	-.0442	-1.14	2.79
60	.06	2.92	-.2183	-.0237	.0759	.0474	-1.12	2.81
72	.06	2.90	-.2107	.0036	.0109	.0649	-1.11	2.82

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (11288) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 1
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	.25	6.88	.7437	-.70	5.33	.1475	-.66	5.34	900	-.24	4.31	-.0214	-.85	3.63
24	.24	6.89	.4883	-.74	5.33					-.10	5.79	.0252	-.84	4.62
36	.18	6.88	.3144	-.77	5.33					.01	6.45	.0683	-.78	5.03
48	.11	6.86	.2143	-.79	5.33					.08	6.70	.1089	-.73	5.23
60	.08	6.82	.1671	-.78	5.33					.11	6.77	.1326	-.70	5.30
72	.07	6.78	.1454	-.75	5.33					.12	6.76	.1384	-.68	5.33

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENZLEY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 3
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	R (Y, YP)	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	5.47	7.69	.1970	-.17	5.66	900	-.17	5.66	.1955	.6292	.3773	-.0294	4.91	4.64	.0202	4.14	-.42	4.91	4.64	.0202	4.14	4.99
24	5.67	7.76	.1835	-.21	5.66	900	-.21	5.66	.1835	.3393	.3864	-.0527	5.00	6.08	.0264	4.91	-.41	5.00	6.08	.0264	4.91	5.35
36	5.69	7.74	.1839	-.21	5.64	900	-.21	5.64	.1839	.1607	.3047	-.0158	5.12	6.95	.0936	5.36	-.36	5.12	6.95	.0936	5.36	5.54
48	5.66	7.66	.1805	-.30	5.51	900	-.30	5.51	.1790	.0717	.2025	-.0442	5.22	7.31	.1447	5.54	-.29	5.22	7.31	.1447	5.54	5.60
60	5.69	7.59	.1722	-.33	5.51	900	-.33	5.51	.1705	.0510	.1431	-.0973	5.27	7.45	.1680	5.60	-.26	5.27	7.45	.1680	5.60	5.64
72	5.70	7.56	.1891	-.31	5.50	900	-.31	5.50	.1714	.0443	.0770	-.0644	5.31	7.55	.1855	5.64	-.22	5.31	7.55	.1855	5.64	5.64

STATION 4 (12858) - CAPE KENNEDY
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 0
ALPHA ANGLE - 90.0

X = U/IAT T)
Y = V/IAT T)

XP = U/IAT T + DT)
YP = V/IAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
MEAN		S.D.	R	MEAN		S.D.	N		GIVEN		GIVEN		R		S.D.		MEAN		S.D.
X	X	X	(X,Y)	Y	Y	Y	XP	YP	XP	YP	XP	YP	XP	YP	XP	YP	XP	YP	
7.62	7.62	8.00	.2184	-.25	6.31	900			7.26	-.48									
OT	MEAN	S.D.	R	MEAN		S.D.	R		MEAN		S.D.	R		S.D.		MEAN		S.D.	
MP	XP	XP	(X,XP)	Y	YP	YP	XP	YP	XP	YP	XP	YP	XP	YP	XP	YP	XP	YP	
12	7.94	8.06	.7926	-.26	6.34	.3857	.2117	.0208	7.30	4.73	-.0100	-.52	4.60						
24	8.04	8.09	.5914	-.29	6.34	.3824	.2119	-.0265	7.38	6.33	.0468	-.50	5.57						
36	8.10	8.08	.4135	-.34	6.31	.2932	.2072	-.0027	7.47	7.25	.1235	-.44	5.98						
48	8.14	8.05	.2871	-.35	6.21	.1974	.2032	.0553	7.57	7.66	.1703	-.38	6.18						
60	8.14	8.01	.2072	-.39	6.13	.1253	.1976	.0574	7.64	7.82	.1959	-.34	6.26						
72	8.14	7.98	.1509	-.38	6.12	.0592	.2001	.0590	7.69	7.91	.2090	-.30	6.30						

STATION (12888) - CAPE VINEDY
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 5
ALPHA ANGLE - 50.0

DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP				
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. YP
12	10.55	8.83	.7705	.6684	.2534	900	5.32	.0787	5.94
24	10.68	8.63	.5746	.4103	.2514		7.02	.1239	6.05
36	10.77	8.63	.4069	.2481	.2533		7.92	.1833	6.57
48	10.82	8.83	.2711	.1262	.2538		3.40	.2158	6.83
60	10.83	8.94	.1871	.0740	.2573		8.58	.2350	6.94
72	10.82	8.94	.1281	.0486	.2537		8.65	.2502	6.98

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	P (YP,X)	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	13.27	9.68	.7769	-.21	7.99	.7107	.7107	.3040	.4034	.0987	.1889	12.66	5.90	.1889	-.57	5.37
24	13.43	9.75	.5712	-.24	7.95	.4623	.4623	.3116	.3690	.0235	.2199	12.69	7.74	.2199	-.52	6.60
36	13.54	9.74	.4167	-.21	7.90	.3144	.3144	.2947	.2947	.0229	.2465	12.75	8.68	.2465	-.45	7.37
48	13.59	9.72	.2784	-.32	7.80	.2104	.2104	.2135	.2135	.0392	.2710	12.75	9.24	.2710	-.40	7.67
60	13.60	9.67	.1884	-.34	7.73	.1281	.1281	.3075	.1414	.0609	.2846	12.94	9.45	.2846	-.34	7.84
72	13.61	9.61	.1259	-.36	7.70	.0896	.0896	.3066	.0694	.0729	.2952	13.00	9.94	.2952	-.28	7.91

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
12.63	-.57

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE WENDEY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 7
 ALPHA ANGLE - 92.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	15.89	10.26	.3124	-.27	9.12	900													
24																			
36																			
48																			
60																			
72																			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	15.89	10.26	.3124	-.27	9.12	900							
24													
36													
48													
60													
72													

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 8
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	19.10	11.35	18.90	11.10	.3210	-1.44	10.47	900	18.29	6.61	.1916	-1.81	6.98	.1741	.7299	.3273	18.29	6.61	.1916	-1.81	6.98
24	19.31	11.48							18.31	8.81	.2525	-1.76	8.83	.0932	.5080	.3347	18.31	8.81	.2525	-1.76	8.83
36	19.46	11.53							18.40	9.95	.2834	-1.71	9.58	.0565	.3739	.3356	18.40	9.95	.2834	-1.71	9.58
48	19.59	11.56							18.51	10.59	.2972	-1.67	9.96	.0406	.2774	.3330	18.51	10.59	.2972	-1.67	9.96
60	19.67	11.54							18.55	10.88	.3052	-1.60	10.24	.0318	.1885	.3320	18.55	10.88	.3052	-1.60	10.24
72	19.69	11.49							18.69	11.05	.3150	-1.53	10.38	.0324	.1176	.3289	18.69	11.05	.3150	-1.53	10.38

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KPH) - 9
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 21.89 S.D. X 12.13 R (X, Y) .3635 MEAN Y -.27 S.D. Y 11.81 N 900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	22.10	12.30	.8082	.34	-.34	11.74	.7560	.3733	21.24	7.07	.2550	-.66	7.59
24	22.36	12.44	.6116	-.35	-.35	11.67	.5392	.3792	21.25	9.48	.3247	-.62	9.80
36	22.54	12.54	.4599	-.38	-.38	11.58	.4099	.3810	21.32	10.70	.3298	-.59	10.63
48	22.69	12.58	.3450	-.40	-.40	11.45	.3234	.3793	21.41	11.35	.3331	-.56	11.05
60	22.81	12.60	.2554	-.44	-.44	11.31	.2196	.3846	21.50	11.71	.3458	-.49	11.45
72	22.83	12.55	.1563	-.50	-.50	11.26	.1441	.3812	21.58	11.89	.3513	-.43	11.64

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 10
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	24.84	13.28	.3938	-.31	13.35	900	24.08	7.83	.2663	-.75	8.19
24							24.08	10.33	.3438	-.71	10.72
36							24.17	11.63	.3464	-.68	11.81
48							24.26	12.33	.3501	-.67	12.39
60							24.37	12.73	.3679	-.57	12.87
72							24.45	12.93	.3792	-.51	13.11

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	24.12	-.86	24.08	7.83	.2663	-.75	8.19
			24.08	10.33	.3438	-.71	10.72
			24.17	11.63	.3464	-.68	11.81
			24.26	12.33	.3501	-.67	12.39
			24.37	12.73	.3679	-.57	12.87
			24.45	12.93	.3792	-.51	13.11

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	28.10	14.09	.8191	-.59	14.79	.3865	-.45	14.85	900	26.93	7.91	.2683	-.94	8.68
24	28.36	14.26	.8424	-.60	14.74						10.56	.3254	-.91	11.94
36	28.53	14.36	.4379	-.63	14.56						11.96	.3330	-.87	12.93
48	28.68	14.43	.3387	-.74	14.38						12.66	.3370	-.85	13.61
60	28.78	14.43	.3198	-.81	14.13						13.08	.3492	-.77	14.17
72	28.80	14.36	.2516		14.04						13.32	.3658	-.71	14.50

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
26.93	-1.10

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 11/56 - 12/70
 ALTITUDE (KH) - 12
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	29.90	14.03	.4052	-0.68	15.47	900

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
	29.02	-1.43

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	30.12	14.25	.8251	-0.80	15.39	.8164	.3308	29.00	7.93	.2853	-1.25	8.89
24	30.43	14.45	.6432	-0.86	15.34	.6351	.2316	29.02	10.73	.3560	-1.16	11.88
36	30.63	14.53	.5042	-0.86	15.14	.4905	.1763	29.11	12.10	.3592	-1.14	13.38
48	30.78	14.56	.4134	-0.84	14.94	.3921	.1348	29.19	12.76	.3708	-1.12	14.12
60	30.90	14.57	.3272	-0.94	14.64	.2896	.1015	29.29	13.24	.3767	-1.07	14.69
72	30.94	14.53	.2692	-1.00	14.58	.1907	.0598	29.38	13.48	.3878	-1.00	15.59

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X, XP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	30.24	13.15	.3793	-46	14.16	900															
24																					
36																					
48																					
60																					
72																					

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X, XP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	30.24	13.15	.3793	-46	14.16	900															
24																					
36																					
48																					
60																					
72																					

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12828) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 50.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	28.57	12.09	.8044	-.72	11.85	.3742	-.85	11.90	900	27.30	7.03	.1818	-1.34	6.63
24	28.78	12.25	.6528	-.77	11.79					27.37	8.95	.2617	-1.27	8.65
36	28.99	12.34	.5151	-.79	11.61					27.48	10.14	.3187	-1.18	9.91
48	29.11	12.40	.4063	-.76	11.38					27.61	10.81	.3309	-1.16	10.65
60	29.32	12.39	.3141	-.83	11.09					27.71	11.23	.3441	-1.10	11.16
72	29.41	12.35	.2436	-.93	11.02					27.82	11.47	.3528	-1.03	11.52

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP						
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y		MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
	24.47	9.90	.3531	-1.42	9.68	300		23.46	-1.14							
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	P (P,X)				MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
12	24.65	10.08	.7951	-.45	9.62	.3520	.2539				23.55	5.93	.1578	-1.11	5.55	
24	24.84	10.24	.6549	-.46	9.56	.3502	.1773				23.61	7.45	.2635	-1.04	7.10	
36	25.01	10.32	.5260	-.52	9.43	.3475	.1243				23.63	8.38	.3020	-.94	8.12	
48	25.14	10.34	.4287	-.54	9.25	.3445	.0916				23.78	8.92	.3128	-.83	8.71	
60	25.30	10.34	.3386	-.52	9.00	.3511	.0467				23.85	9.28	.3241	-.83	9.15	
72	25.33	10.28	.2593	-.63	8.95	.3541	.0141				23.97	9.52	.3331	-.77	9.42	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 16
 ALPHA ANGLE - 50.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	20.19	8.57	.7766	-.44	8.04	.3104	-.42	8.07	900	19.13	5.32	.2141	-1.01	4.68
24	20.40	8.60	.6449	-.44	8.00					19.16	6.44	.2498	-.99	5.95
36	20.53	8.63	.5277	-.49	7.89					19.24	7.12	.2769	-.91	6.84
48	20.65	8.62	.4261	-.50	7.76					19.34	7.62	.2831	-.84	7.35
60	20.74	8.56	.3422	-.55	7.59					19.43	7.91	.2912	-.77	7.70
72	20.86	8.51	.2858	-.57	7.54					19.48	8.07	.2992	-.69	7.91

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128881) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMH) - 17
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. Y	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	15.05	7.43	.2043	-.43	6.74	900	14.27	-.83	14.35	4.90	.0308	-.85	4.36
24	15.24	7.52	.7494	.7491	.2120				14.38	5.76	.0357	-.84	5.22
36	15.40	7.53	.6250	.6252	.2193				14.38	6.23	.1363	-.78	5.89
48	15.58	7.56	.5949	.4572	.2285				14.44	6.62	.1718	-.72	6.27
60	15.73	7.59	.4398	.3337	.2335				14.47	6.85	.1810	-.67	6.53
72	15.89	7.58	.3638	.2128	.2283				14.48	6.99	.1861	-.63	6.65
	16.06	7.55	.3230	.1284	.2196								

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) - 18
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N
12	10.18	6.57	.7135	-.40	5.19	.1792	-.41	5.13	900
24	10.33	6.61	.6378	-.42	5.18				
36	10.46	6.61	.5311	-.43	5.17				
48	10.66	6.63	.4541	-.48	5.12				
60	10.79	6.60	.3603	-.53	5.10				
72	10.92	6.57	.3149	-.56	5.09				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, Y)	MEAN Y	S.D. Y	N
12	10.18	6.57	.1073	-.81	3.63				
24	10.33	6.61	.1330	-.81	3.99				
36	10.46	6.61	.1289	-.82	4.44				
48	10.66	6.63	.1523	-.75	4.75				
60	10.79	6.60	.1514	-.72	4.92				
72	10.92	6.57	.1606	-.65	5.04				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 19
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U'AT T + DT
 YP = V'AT T + DT

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	6.44	5.67	.1853	-1.17	4.09	900	6.16	-1.44	6.20	4.20	.0982	-1.34	3.24
DT													
MR													
12	6.52	3.72	.6720	.6030	.1882	.2008	.1140		6.20	4.20	.0982	-1.34	3.24
24	6.65	5.73	.6320	.5921	.1915	.1672	.0656		6.14	4.39	.1790	-1.32	3.29
36	6.75	5.73	.5246	.4096	.1908	.1691	.0545		6.14	4.82	.1483	-1.29	3.71
48	6.88	5.73	.4576	.3425	.1864	.1361	.0371		6.12	5.04	.1670	-1.26	3.83
60	7.00	5.73	.3701	.2298	.1962	.1093	.0178		6.13	5.26	.1740	-1.23	3.97
72	7.14	5.71	.3188	.1777	.1887	.0755	.0035		6.12	5.37	.1837	-1.22	4.02

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 20
ALPHA ANGLE - 90.0

X = U1AT T)
Y = V1AT T)
XP = U1AT T + DT)
YP = V1AT T + DT)

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (ft) - 21
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	3.43	5.55	.7034	.00	3.15	.4314	-.02	3.10	900	.2137	.2004	3.67	3.93	.1051	-.33	2.78
24	3.50	5.58	.6934	.02	3.14	.5064				.1648	.1830	3.65	3.98	.1779	-.44	2.67
36	3.59	5.58	.5794	.03	3.13	.3127				.1447	.1836	3.50	4.50	.1737	-.27	2.94
48	3.70	5.58	.5525	.02	3.10	.2965				.1217	.1575	3.47	4.61	.1982	-.27	2.96
60	3.81	5.58	.4727	-.00	3.09	.1443				.1017	.1215	3.42	4.87	.2065	-.13	3.06
72	3.86	5.57	.4526	-.00	3.11	.1418				.0989	.0800	3.46	4.93	.2130	-.13	3.06

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0
 X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN XP	S.D. XP	R (X,XP)	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
12	3.28	6.01	.7662	5.95	.2188	.07	3.27	900
24	3.35	6.05	.7161					
36	3.45	6.04	.6306					
48	3.54	6.03	.5953					
60	3.64	6.05	.5185					
72	3.73	6.09	.4853					

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (XP,X)	GIVEN X	GIVEN Y
12	3.10	3.82	.1186	.07	2.92	.1896	3.19	.10
24	3.05	4.15	.1100	.07	2.78	.1792		
36	3.00	4.62	.1544	.06	3.09	.1477		
48	2.95	4.78	.2005	.06	3.17	.1090		
60	2.93	5.08	.2156	.07	3.23	.0813		
72	2.90	5.19	.2239	.06	3.24	.0539		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN Y _P	S.D. Y _P
12	3.72	6.43	.2058	.34	3.21	900	3.80	3.84	.1852	3.72	3.65	.0857	.35	2.88
24								4.14	.1685	3.65	3.60	.1391	.33	2.79
36								4.67	.1526	3.60	3.54	.1456	.32	3.08
48								4.90	.0856	3.54	3.50	.2177	.33	3.13
60								5.17	.0527	3.50	3.46	.2245	.33	3.20
72								5.38	.0540	3.46		.2132	.33	3.21

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (NM) - 24
 ALPHA ANGLE - 50.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	4.81	6.99	.1953	.45	3.31	900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN		S.D.		R		MEAN		S.D.		R		MEAN		S.D.	
	XP	YP	XP	YP	(X, XP)	(Y, YP)	(XP, YP)	(XP, Y)	(YP, X)	XP	YP	(XP, XP)	(YP, YP)	XP	YP	(XP, YP)
12	4.88	7.00	.8154	3.32	.4544	.1972	.1901	.1840	4.77	4.04	.0589	.46	2.93			
24	4.98	7.04	.7756	3.32	.4390	.1834	.1634	.1703	4.70	4.41	.1039	.45	2.96			
36	5.11	7.08	.7142	3.33	.2067	.1842	.1755	.1210	4.62	4.89	.1061	.43	3.20			
48	5.22	7.14	.6623	3.32	.1873	.1848	.1665	.0901	4.56	5.19	.1237	.43	3.22			
60	5.33	7.20	.6113	3.31	.1487	.1835	.1235	.0598	4.52	5.52	.1547	.43	3.28			
72	5.44	7.24	.5640	3.28	.0194	.1830	.0932	.0276	4.48	5.74	.1746	.43	3.29			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	6.46	7.79	.8459	.4561	.2355	.2028	.2178	.2009	.1907	.1515	.1396	.1487	.1053	.0844	.625	4.14	.1195	.36	3.33
24	6.57	7.83	.8106	.4314	.2158	.1907	.4314	.2568	.2123	.2050	.1985	.0561	.43	.39	6.18	4.54	.1348	.35	3.38
36	6.67	7.85	.7526	.2568	.2155	.1515	.2568	.2123	.2050	.1985	.0561	.43	.39	.42	6.11	5.11	.1955	.34	3.62
48	6.80	7.92	.6928	.1676	.2123	.1396	.1676	.2050	.1985	.0561	.43	.39	.42	.41	6.05	5.60	.1967	.34	3.69
60	6.91	7.94	.6502	.0574	.2050	.1181	.0574	.2050	.1985	.0561	.43	.39	.42	.42	6.00	5.89	.2126	.33	3.74
72	7.04	7.95	.6174	.0561	.1985	.0953	.0561	.1985	.0953	.0561	.43	.39	.42	.43	5.94	6.09	.2298	.33	3.75

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112281) - CAPE KENNEDY
 PATH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 26
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT)
 YP = V(IAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	8.02	8.32	.8557	8.25	.2332	.31	3.94	900	7.84	.33	7.76	4.25	.0703	.30	3.23
24	8.08	8.35	.8038								7.72	4.90	.1181	.28	3.38
36	8.20	8.35	.7489								7.64	5.47	.1612	.28	3.69
48	8.32	8.43	.6967								7.58	5.92	.1978	.28	3.78
60	8.42	8.47	.6402								7.55	6.33	.1826	.27	3.88
72	8.52	8.53	.5959								7.52	6.62	.1947	.26	3.90

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 27
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,X ²)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,X)	MEAN YP	S.D. YP
12	9.46	8.94	.8723	.55	4.06	.1622	.52	4.04	900	9.53	4.34	.1487	9.53	3.26
24	9.51	8.99	.8182	.56	4.09					9.47	5.11	.1105	9.47	3.40
36	9.50	9.02	.7475	.57	4.09					9.39	5.90	.0880	9.39	3.73
48	9.58	9.05	.6542	.59	4.07					9.33	6.47	.0686	9.33	3.84
60	9.80	9.13	.6330	.64	4.07					9.24	6.86	.0329	9.24	3.96
72	9.83	9.20	.5680	.72	4.03					9.19	7.15	-.0011	9.19	3.97

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
9.57	.98	4.34	.0355	.77	3.26

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12868) - CAPE KENNEDY

X = U/IAT T)
Y = V/IAT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
11	1/56 - 12/70	0	90.0	.04	2.90	-.2098	-1.11	2.82	900
11	1/56 - 12/70	1	90.0	.18	6.87	.1475	-.66	5.34	900
11	1/56 - 12/70	2	90.0	2.84	7.32	.1798	-.18	5.34	900
11	1/56 - 12/70	3	90.0	5.47	7.69	.1970	-.17	5.66	900
11	1/56 - 12/70	4	90.0	7.82	8.00	.2164	-.25	6.31	900
11	1/56 - 12/70	5	90.0	10.40	8.73	.2589	-.27	7.00	900
11	1/56 - 12/70	6	90.0	13.12	9.62	.3025	-.23	7.95	900
11	1/56 - 12/70	7	90.0	15.69	10.26	.3121	-.27	9.12	900
11	1/56 - 12/70	8	90.0	18.90	11.18	.3210	-.44	10.47	900
11	1/56 - 12/70	9	90.0	21.89	12.13	.3635	-.27	11.81	900
11	1/56 - 12/70	10	90.0	24.84	13.28	.3938	-.31	13.35	900
11	1/56 - 12/70	11	90.0	27.83	13.80	.3865	-.45	14.85	900
11	1/56 - 12/70	12	90.0	29.90	14.03	.4052	-.68	15.47	900
11	1/56 - 12/70	13	90.0	30.24	13.15	.3793	-.46	14.16	900
11	1/56 - 12/70	14	90.0	28.33	11.84	.3742	-.65	11.90	900
11	1/56 - 12/70	15	90.0	24.47	9.90	.3551	-.42	9.68	900
11	1/56 - 12/70	16	90.0	20.01	8.48	.3104	-.42	8.07	900
11	1/56 - 12/70	17	90.0	15.06	7.43	.2043	-.43	6.74	900
11	1/56 - 12/70	18	90.0	10.01	6.51	.1792	-.41	5.13	900
11	1/56 - 12/70	19	90.0	6.44	5.67	.1853	-.17	4.09	900
11	1/56 - 12/70	20	90.0	4.19	5.32	.1609	-.12	3.42	900
11	1/56 - 12/70	21	90.0	3.37	5.53	.2279	-.02	3.10	900
11	1/56 - 12/70	22	90.0	3.16	5.95	.2188	.07	3.27	900
11	1/56 - 12/70	23	90.0	3.72	6.43	.2058	.34	3.21	900
11	1/56 - 12/70	24	90.0	4.81	6.99	.1953	.45	3.31	900
11	1/56 - 12/70	25	90.0	6.38	7.76	.2359	.37	3.77	900
11	1/56 - 12/70	26	90.0	7.91	8.25	.2332	.31	3.94	900
11	1/56 - 12/70	27	90.0	9.42	8.88	.1622	.52	4.04	900

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 0
 ALPHA ANGLE - 32.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. Y	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. YP	R (XP, YP)	MEAN YP	S.D. XP	R (XP, YP)	MEAN XP	S.D. YP
.50	2.57	-.2894	-.93	2.86	924	-.86	2.97	-.3028	-.77	2.67	-.3044	-.84	2.42
.55	2.55		.2523	.2932		-.82	2.99	-.2932	-.82	2.47	-.3445	-.65	2.77
.54	2.65		.0678	.1634		-.78	2.97	-.2932	-.78	2.55	-.3035	-.62	2.90
.53	2.65		.0057	.0713		-.78	2.98	-.2916	-.78	2.65	-.3021	-.60	2.95
.53	2.66		-.0131	.0318		-.77	2.99	-.2868	-.77	2.67	-.2914	-.59	2.96
.53	2.67		.0128	-.0484			3.01	-.2799		2.65	-.2849	-.59	2.96

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. YP
56	-1.06			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12/869) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	R (XP, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
1.58	6.73	-.0011	.27	5.88	924	.27	5.88	.21	1.11	.21									
1.55	6.70	.7125	.39	5.89		.6148	.0033	.3161	.3225	1.33		.6148	.0033	.3161	1.33	4.18	-.0599	.04	4.24
1.61	6.71	.3770	.54	5.90		.2585	.0043	.3417	-.3377	1.52		.2585	.0043	.3417	1.52	5.80	-.0348	.04	5.31
1.73	6.75	.1816	.62	5.89		.0346	.0057	.2162	-.2096	1.57		.0346	.0057	.2162	1.57	6.46	-.0355	.14	5.73
1.82	6.74	.0970	.64	5.87		-.0254	.0018	.0967	-.0905	1.56		-.0254	.0018	.0967	1.56	6.67	-.0129	.22	5.85
1.84	6.74	.0619	.68	5.88		-.0288	.0042	.0388	-.0358	1.55		-.0288	.0042	.0388	1.55	6.71	-.0045	.23	5.87
1.89	6.79	.0569	.70	5.93		-.0228	.0132	.0088	.0090	1.53		-.0228	.0132	.0088	1.53	6.72	-.0014	.28	5.87

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN
 X
 Y
 .21

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y					
	5.03	7.15	.0328	.52	5.56	924	4.58	.71					

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 3
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
1	8.37	7.51	.0932	.38	5.93	924								
2	8.35	7.47	.7486	.5727	.0904	.2894	7.95	4.54	.0532	.41	4.65			
4	8.38	7.46	.5226	.2821	.0960	.2950	8.00	6.06	.0119	.30	5.46			
16	8.47	7.49	.3537	.1097	.0980	.2017	8.17	6.86	.0447	.29	5.78			
48	8.57	7.50	.2655	.0537	.0962	.1178	8.20	7.20	.0699	.32	5.80			
10	8.65	7.48	.2295	.0573	.0904	.0823	8.20	7.31	.0778	.33	5.90			
12	8.73	7.48	.2317	.0940	.1002	.0551	8.18	7.30	.0836	.34	5.91			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12869) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMH) - 4
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

MEAN X 11.71
 S.D. X 8.06
 R (X,Y) .1565
 MEAN Y .70
 S.D. Y 6.67
 N 924

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X 11.19
 GIVEN Y 1.04

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	11.69	8.02	.7551	.79	6.71	.5898	.1579	.3164	-.0897	11.25	5.00	.0692	.74	5.17
24	11.73	8.02	.5526	.87	6.72	.3119	.1594	.3135	-.1272	11.34	6.48	.0561	.62	6.08
36	11.80	8.05	.4039	1.01	6.76	.1617	.1630	.2266	-.0919	11.44	7.26	.0990	.60	6.44
48	11.87	8.07	.3314	1.04	6.79	.0780	.1601	.1646	-.0369	11.47	7.57	.1154	.61	6.57
60	11.94	8.08	.2848	1.10	6.80	.0606	.1544	.1277	.0127	11.49	7.72	.1300	.62	6.61
72	12.04	8.09	.2771	1.18	6.83	.0519	.1541	.0798	.016	11.47	7.74	.1416	.64	6.64

STATION (12559) - CAPE KENNEDY
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 5
ALPHA ANGLE - 90.0

$$\begin{aligned} X &= U(AT) \\ Y &= V(AT) \\ XP &= U(AT + DT) \\ YP &= V(AT + DT) \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP								
MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	MEAN XP	R (XP, YP)	MEAN YP	S.D. YP
14.54	8.83	.1726	1.16	7.71	924	14.07	1.65					
								5.56	14.11	.0343	1.28	6.01
								7.17	14.19	.0841	1.15	7.07
								7.95	14.27	.1148	1.08	7.44
								8.29	14.31	.1321	1.08	7.59
								8.49	14.35	.1462	1.09	7.64
								8.55	14.34	.1527	1.10	7.65

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 6
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X
 17.52

S.D. X
 9.42

R (X, Y)
 .1966

MEAN Y
 1.21

S.D. Y
 8.47

N
 924

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN XP
 17.50

S.D. XP
 9.39

R (X, XP)
 .7832

MEAN YP
 1.31

S.D. YP
 8.49

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 17.13

GIVEN Y
 1.90

R (XP, YP)
 .1923

MEAN XP
 17.15

S.D. XP
 5.71

R (XP, YP)
 .0317

MEAN YP
 1.39

S.D. YP
 6.72

R (XP, YP)
 .1061

MEAN YP
 1.23

S.D. YP
 7.82

R (XP, YP)
 .1431

MEAN YP
 1.16

S.D. YP
 8.23

R (XP, YP)
 .1615

MEAN YP
 1.15

S.D. YP
 8.36

R (XP, YP)
 .1642

MEAN YP
 1.14

S.D. YP
 8.36

R (XP, YP)
 .1677

MEAN YP
 1.13

S.D. YP
 8.38

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$$\begin{aligned} X &= U(AT \ T) \\ Y &= V(AT \ T) \\ XP &= U(AT \ T + DT) \\ YP &= V(AT \ T + DT) \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP											
MEAN		S.D.		P		MEAN		S.D.		N		GIVEN		GIVEN		S.D.		MEAN		S.D.	
X	Y	X	Y	(X,Y)	X	Y	X	Y	X	Y		X	Y	X	Y	XP	YP	XP	YP	XP	YP
23.56		11.75		.2809			1.85		10.26		924			23.35		2.56					
MEAN	S.D.	P	MEAN	S.D.	N	GIVEN	GIVEN	S.D.	MEAN	S.D.	R	MEAN	S.D.	R	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	
XP	YP	(XP,YP)	(Y,YP)	(XP,Y)	(YP,X)																
23.47	11.65	.8035	1.96	10.25	.1212							23.39	6.89	.1933	2.17	7.82					
23.45	11.53	.6178	2.10	10.32	.0727							23.43	9.16	.2109	1.98	9.38					
23.51	11.82	.4819	2.23	10.39	.0453							23.44	10.23	.2545	1.89	9.95					
23.54	11.67	.3939	2.34	10.49	.1268							23.46	10.77	.2664	1.86	10.10					
23.53	11.68	.3379	2.41	10.51	.0480							23.47	11.04	.2660	1.84	10.14					
23.67	11.66	.2969	2.54	10.52	.0553							23.46	11.22	.2609	1.82	10.13					

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 10
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT)
YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	29.79	14.49	.8184	2.42	12.59	.3070	2.30	13.01	924	28.84	3.09	.2006	29.07	8.40	2.66	9.41
24	29.73	14.38	.8494	2.57	13.05							.2941	29.27	11.12	2.43	11.62
36	29.75	14.34	.5145	2.69	13.14							.2878	29.38	12.54	2.34	12.47
48	29.68	14.32	.4176	2.75	13.27							.2897	29.51	13.29	2.31	12.69
60	29.68	14.34	.3473	2.82	13.27							.2804	29.58	13.72	2.25	12.77
72	29.68	14.32	.2940	2.93	13.27							.2812	29.63	13.98	2.23	12.79

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12852) - CAPE WENEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1958 - 12/70
 ALTITUDE (m) - 11
 ALPHA ANGLE - 90.0

Y = UAT (1)
 Y = VAT (1)

XP = UAT (1 + DT)
 YP = VAT (1 + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	MEAN YP	S.D. YP
12	32.49	15.08	.3057	2.35	14.06	924	32.49	8.49	.1855	2.72	9.85	.1855	32.49	14.88	2.72	14.88
24																
36																
48																
60																
72																

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	32.49	8.49	.1855	2.72	9.85
24	32.52	11.37	.2501	2.51	12.41
36	32.52	12.75	.2828	2.43	13.36
48	32.55	13.55	.2958	2.40	13.62
60	32.54	14.07	.2855	2.38	13.75
72	32.52	14.45	.2818	2.36	13.80

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112868 - CAPE KEMEROY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1956 - 12/70
 ALTITUDE (KM) - 12
 ALPHA ANGLE - 90.0

$X = U/\sigma_X$
 $Y = V/\sigma_Y$

$XP = U/\sigma_{XP}$
 $YP = V/\sigma_{YP}$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	35.01	15.15	.2937	2.69	14.62	924						
12	34.97	15.03	.8312	2.88	14.65			34.91	8.43	.1785	3.12	9.44
13	34.91	14.87	.6524	3.07	14.69			34.97	11.49	.2657	2.89	12.43
14	34.88	14.88	.5193	3.18	14.73			34.95	12.96	.2775	2.79	13.55
15	34.80	14.86	.4218	3.22	14.79			34.93	13.75	.2858	2.75	14.07
16	34.91	14.88	.3928	3.34	14.82			34.93	14.28	.2806	2.71	14.26
17	34.94	14.93	.2545	3.48	14.76			34.93	14.66	.2784	2.68	14.33

DATE	DESCRIPTION	AMOUNT	BALANCE
1900	TO BALANCE	100.00	100.00
1901	BY SALES	50.00	150.00
1902	BY SALES	75.00	225.00
1903	BY SALES	100.00	325.00
1904	BY SALES	125.00	450.00
1905	BY SALES	150.00	600.00
1906	BY SALES	175.00	775.00
1907	BY SALES	200.00	975.00
1908	BY SALES	225.00	1200.00
1909	BY SALES	250.00	1450.00
1910	BY SALES	275.00	1725.00
1911	BY SALES	300.00	2025.00
1912	BY SALES	325.00	2350.00
1913	BY SALES	350.00	2700.00
1914	BY SALES	375.00	3075.00
1915	BY SALES	400.00	3475.00
1916	BY SALES	425.00	3900.00
1917	BY SALES	450.00	4350.00
1918	BY SALES	475.00	4825.00
1919	BY SALES	500.00	5325.00
1920	BY SALES	525.00	5850.00
1921	BY SALES	550.00	6400.00
1922	BY SALES	575.00	6975.00
1923	BY SALES	600.00	7575.00
1924	BY SALES	625.00	8200.00
1925	BY SALES	650.00	8850.00
1926	BY SALES	675.00	9525.00
1927	BY SALES	700.00	10225.00
1928	BY SALES	725.00	10950.00
1929	BY SALES	750.00	11700.00
1930	BY SALES	775.00	12475.00
1931	BY SALES	800.00	13275.00
1932	BY SALES	825.00	14100.00
1933	BY SALES	850.00	14950.00
1934	BY SALES	875.00	15825.00
1935	BY SALES	900.00	16725.00
1936	BY SALES	925.00	17650.00
1937	BY SALES	950.00	18600.00
1938	BY SALES	975.00	19575.00
1939	BY SALES	1000.00	20575.00
1940	BY SALES	1025.00	21600.00
1941	BY SALES	1050.00	22650.00
1942	BY SALES	1075.00	23725.00
1943	BY SALES	1100.00	24825.00
1944	BY SALES	1125.00	25950.00
1945	BY SALES	1150.00	27100.00
1946	BY SALES	1175.00	28275.00
1947	BY SALES	1200.00	29475.00
1948	BY SALES	1225.00	30700.00
1949	BY SALES	1250.00	31950.00
1950	BY SALES	1275.00	33225.00
1951	BY SALES	1300.00	34525.00
1952	BY SALES	1325.00	35850.00
1953	BY SALES	1350.00	37200.00
1954	BY SALES	1375.00	38575.00
1955	BY SALES	1400.00	39975.00
1956	BY SALES	1425.00	41400.00
1957	BY SALES	1450.00	42850.00
1958	BY SALES	1475.00	44325.00
1959	BY SALES	1500.00	45825.00
1960	BY SALES	1525.00	47350.00
1961	BY SALES	1550.00	48900.00
1962	BY SALES	1575.00	50475.00
1963	BY SALES	1600.00	52075.00
1964	BY SALES	1625.00	53700.00
1965	BY SALES	1650.00	55350.00
1966	BY SALES	1675.00	57025.00
1967	BY SALES	1700.00	58725.00
1968	BY SALES	1725.00	60450.00
1969	BY SALES	1750.00	62200.00
1970	BY SALES	1775.00	63975.00
1971	BY SALES	1800.00	65775.00
1972	BY SALES	1825.00	67600.00
1973	BY SALES	1850.00	69450.00
1974	BY SALES	1875.00	71325.00
1975	BY SALES	1900.00	73225.00
1976	BY SALES	1925.00	75150.00
1977	BY SALES	1950.00	7

UNBYPASSABLE NORMAL STATISTICS OF X, Y, Z, W										CONJUNCTIONAL BYPASSABLE NORMAL STATISTICS FOR X, Y AND Z																															
MEAN					S.D.					P					MEAN					S.D.					P																
X					Y					Z					X					Y					Z																
30	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	30	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000			
100	150	200	250	300	350	400	450	500	55																																

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DIAPHRAGMATIC AND COORDINATE BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: 125551 - CASE: 125551
 DATE: 12/10/70 - 12/10/70
 TIME: 12:00 - 12:00
 ALPHABET: 125551 - 125551

DIAPHRAGMATIC NORMAL STATISTICS OF X, Y, XP, YP									
MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	COORDINATE BIVARIATE NORMAL STATISTICS FOR XP, YP AND YP			
26.50	9.52	.2693	2.01	8.39	924	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP
						26.24	26.24	2.71	
MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (XP, YP)	MEAN Y	S.D. Y	P (XP, YP)	S.D. YP
26.53	9.43	.2691	2.04	8.43	.2693	26.25	26.25	.2693	8.43
26.51	9.48	.2692	2.13	8.55	.2697	26.30	26.30	.2693	8.55
26.54	9.49	.2693	2.22	8.63	.2700	26.33	26.33	.2693	8.63
26.56	9.47	.2695	2.28	8.64	.2704	26.37	26.37	.2693	8.64
26.57	9.49	.2696	2.34	8.64	.2707	26.41	26.41	.2693	8.64
26.59	9.54	.2698	2.45	8.63	.2709	26.44	26.44	.2693	8.63

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF Y, Y, XP, YP

STATION 112858, - GARE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE "M" - 17
 ALPHA ANGLE - 55.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP									
ST NO	MEAN X		S.D. X	R (X, Y)		MEAN Y	S.D. Y	N	P	MEAN YP		S.D. YP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)
	XP	YP		XP	YP					XP	YP		XP	YP		XP	YP		XP
12	21.65	8.32	.7682	.53	.57	.7820	.2755	.3198	.1593	21.39	5.32	.1674	1.34	4.60	.2400	1.79	5.77	.2400	1.79
24	21.67	8.31	.6104	1.61	7.65	.6277	.2738	.2826	.0834	21.40	6.98	.2400	1.79	5.77	.2400	1.79	5.77	.2400	1.79
36	21.67	8.30	.4543	1.63	7.71	.4999	.2744	.2426	.0414	21.45	7.43	.2535	1.83	6.43	.2535	1.83	6.43	.2535	1.83
48	21.63	8.27	.3312	.73	7.75	.3975	.2752	.2119	.0349	21.52	7.85	.2530	1.84	6.83	.2530	1.84	6.83	.2530	1.84
60	21.65	8.35	.2258	1.77	7.76	.3068	.2802	.1879	.0268	21.55	9.13	.2535	1.85	7.08	.2535	1.85	7.08	.2535	1.85
72	21.63	8.32	.1714	1.84	7.74	.2393	.2791	.1671	.0476	21.63	8.22	.2558	1.95	7.23	.2558	1.95	7.23	.2558	1.95

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 0
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT)
 YP = V(1AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 16.24
 S.D. X 7.33
 R (X, Y) .2434
 MEAN Y 1.01
 S.D. Y 6.13
 H 924

GIVEN X 16.16
 GIVEN Y 1.57

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
1-2	16.23	7.33	.7063	1.00	6.13	.7628	.2388	.3302	.1369	16.17	5.19	.0747	1.41	3.65
24	16.23	7.31	.5834	1.05	6.17	.6313	.2359	.2931	.0793	16.16	5.94	.1737	1.31	4.66
35	16.23	7.30	.4899	1.11	6.23	.4985	.2399	.2694	.0532	16.17	6.37	.1946	1.21	5.23
49	16.19	7.30	.3875	1.15	6.26	.4027	.2391	.2291	.0338	16.20	6.75	.2118	1.16	5.55
60	16.17	7.31	.3154	1.18	6.25	.3127	.2439	.1850	.0314	16.22	6.95	.2215	1.12	5.78
72	16.16	7.33	.2465	1.24	6.22	.2536	.2469	.1601	.0268	16.23	7.10	.2272	1.08	5.90

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CLASSIFICATION AND COORDINATE NORMAL STATISTICS OF X, Y, ZP, VP

STATION 13583 - 2125 RECEIVED
 MONTH OF RECORD - JUNE 1962
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (M) - 13
 ALPHA ANGLE - 30.0
 X = U.A. T
 Y = V(A.T)
 ZP = J(A.T + 57)
 YP = V(A.T + 57)

КЛАССИФИКАЦИЯ НОРМАЛЬНЫХ СТАТИСТИК ОТ Х.У.Х.У.У.

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N		GIVEN X	P (XP,Y)	MEAN YP	S.D. YP		GIVEN Y	P (XP,Y)	MEAN YP	S.D. YP
	11.16	8.84	.2763	.58	4.85	924		11.21	1.02							
	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (XP,Y)	R (YP,X)	S.D. XP	P (XP,Y)	MEAN XP	S.D. XP		P (XP,Y)	MEAN XP	S.D. XP	S.D. YP
12	11.17	8.81	.6898	.6533	.2689	.3251	.1691	4.96	.1159	.84	3.60					
13	11.14	8.92	.6321	.5941	.2663	.3162	.1320	5.23	.1359	.80	3.83					
14	11.14	8.86	.5191	.52	.2714	.3144	.0599	5.82	.1351	.73	4.23					
15	11.13	8.76	.4528	.4091	.2757	.2810	.0722	6.05	.2107	.71	4.35					
16	11.10	8.58	.3853	.2868	.2777	.2699	.0591	6.30	.2121	.66	4.55					
17	11.10	8.59	.3397	.2710	.2802	.2599	.0528	6.43	.2199	.64	4.58					

005 - JOHN RAY
02 - " " " " " "
06/21 - 55 - 08/23 5:05 PM
08/23 - 55 - 08/23 5:05 PM
08/23 - 55 - 08/23 5:05 PM

55:5:1.5 Yoda 3:1:01:3 Y6:0:300

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 21
 ALPHA ANGLE - 92.0

X = U/AT T
 Y = V/AT T

XP = U/AT T + DT
 YP = V/AT T + DT

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
1	7.37	6.52	.2894	.30	3.71	924																
2	7.38	6.50	.6997	.4302	3.68																	
24	7.38	6.53	.6245	.4612	3.70																	
75	7.32	6.55	.9928	.3326	3.71																	
42	7.24	6.56	.4335	.2724	3.73																	
50	7.15	6.59	.4215	.2222	3.74																	
72	7.13	6.59	.3393	.1905	3.73																	

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
1	7.25	4.73	.1758	.48	3.30
2	7.21	5.58	.2056	.47	3.25
24	7.25	5.41	.2287	.42	3.46
75	7.33	5.56	.2347	.40	3.53
42	7.33	5.90	.2354	.39	3.56
50	7.35	6.12	.2548	.38	3.61

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QUADRVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (120623) - CAPE KENNEDY
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/55 - 12/70
ALTITUDE (ft) - 22
ALPHA ANGLE - 90.0

X = U/IAT T)
Y = V/IAT T)

XP = U/IAT T + DT)
YP = V/IAT T + DT)

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	7.33	6.41	.2682	.10	3.33	924

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN X	S.D. XP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	7.23	6.42	.7317	.07	3.31	.4825	7.13	4.37	.2231	7.13	4.37	.1039	.21	2.88
24	7.25	6.43	.6831	.05	3.32	.4557	7.15	4.65	.1978	7.15	4.65	.1533	.22	2.89
36	7.27	6.44	.6277	.03	3.35	.4453	7.25	5.03	.1626	7.25	5.03	.1200	.18	3.12
48	7.15	6.45	.5634	.02	3.37	.4232	7.22	5.34	.1260	7.22	5.34	.1021	.17	3.15
60	7.08	6.47	.4865	.02	3.37	.4228	7.28	5.60	.1237	7.28	5.60	.2068	.16	3.22
72	7.01	6.49	.4113	.00	3.37	.4051	7.28	5.93	.0633	7.28	5.93	.2415	.14	3.26

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (24) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	8.23	7.02	.1909	.18	3.50	924

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	8.25	7.06	.7651	.17	3.53	.4020	7.91	4.52	.1331	.26	3.19
24	8.24	7.07	.7203	.14	3.55	.4592	7.92	4.95	.1335	.29	3.10
36	8.17	7.09	.6348	.10	3.57	.2827	8.01	5.42	.1327	.25	3.34
48	8.10	7.14	.5663	.09	3.60	.2978	8.07	5.78	.1672	.27	3.33
60	7.97	7.17	.5262	.07	3.60	.1341	8.13	5.96	.1703	.22	3.46
72	7.98	7.21	.4415	.06	3.61	.0967	8.15	6.26	.1653	.21	3.48

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT)
 YP = V(AT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	11.89	8.68	.7870	.64	3.90	.4859	.1844	11.59	5.35	.1209	.70	3.41
36	48			.7381	.62	3.91	.4578	.1973	11.62	5.82	.1876	.71	3.47
60	72			.6679	.60	3.91	.2672	.2022	11.69	6.44	.1804	.69	3.77
				.6221	.58	3.93	.2411	.1905	11.78	6.77	.2038	.68	3.80
				.5577	.56	3.92	.1314	.1897	11.86	7.19	.1961	.63	3.88
				.5082	.54	3.93	.0929	.1980	11.91	7.45	.1933	.67	3.90

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12582 - CAPE JERSEY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE - 25
 ALPHA ANGLE - 30.0

X = VIAT T
 Y = VIAT T
 XP = VIAT T + ST
 YP = VIAT T + ST

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN X	S.D. X	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	13.42	9.54	.1194	.85	4.21	924														
24																				
36																				
48																				
60																				
72																				

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION NUMBER - CAPE WENEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (MH) - 27
 ALPHA ANGLE - 90.0

X = U(1,1)
 Y = V(1,1)

XP = U(1,1 + DT)
 YP = V(1,1 + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
	14.62	10.22	.1122	1.27	4.45	924

	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	14.65	10.30	.8524	1.26	4.44	.5997	.1250	.0953	14.21	5.34	.1034	1.29	3.56
24	14.65	10.36	.7883	1.29	4.56	.5403	.1405	.0827	14.25	6.28	.1241	1.27	3.74
36	14.59	10.44	.7329	1.23	4.57	.3806	.1465	.0519	14.31	6.95	.1434	1.27	4.11
48	14.50	10.55	.6762	1.25	4.58	.2934	.1450	.0369	14.33	7.51	.1474	1.28	4.24
60	14.38	10.62	.6083	1.23	4.57	.2036	.1424	.0252	14.48	8.09	.1415	1.28	4.35
72	14.25	10.70	.5636	1.16	4.59	.1616	.1548	.0196	14.56	8.42	.1364	1.29	4.39

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	14.17	1.30

BIVARIATE NORMAL STATISTICS OF X, Y
STATION (12068) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
12	1/56 - 12/70	0	92.0	.60	2.67	-.2894	-.93	2.96	924
12	1/56 - 12/70	1	92.0	1.58	6.73	-.0011	.27	5.88	924
12	1/56 - 12/70	2	92.0	5.03	7.15	.0328	.52	5.55	924
12	1/56 - 12/70	3	92.0	8.37	7.51	.0332	.38	5.93	924
12	1/56 - 12/70	4	92.0	11.71	8.06	.1565	.70	6.67	924
12	1/56 - 12/70	5	92.0	14.54	8.83	.1725	1.16	7.71	924
12	1/56 - 12/70	6	92.0	17.52	9.42	.1955	1.21	8.47	924
12	1/56 - 12/70	7	92.0	20.50	10.52	.2218	1.43	9.32	924
12	1/56 - 12/70	8	92.0	23.56	11.75	.2803	1.85	10.26	924
12	1/56 - 12/70	9	92.0	26.78	13.34	.3083	2.12	11.53	924
12	1/56 - 12/70	10	92.0	29.88	14.63	.3370	2.30	13.01	924
12	1/56 - 12/70	11	92.0	32.49	15.08	.3557	2.35	14.06	924
12	1/56 - 12/70	12	92.0	35.01	15.16	.3737	2.63	14.62	924
12	1/56 - 12/70	13	92.0	35.94	14.03	.3156	3.00	14.54	924
12	1/56 - 12/70	14	92.0	34.50	12.85	.3365	2.70	13.54	924
12	1/56 - 12/70	15	92.0	31.00	11.28	.3111	2.32	11.17	924
12	1/56 - 12/70	16	92.0	26.50	9.52	.2633	2.01	9.41	924
12	1/56 - 12/70	17	92.0	21.64	8.35	.2713	1.53	8.39	924
12	1/56 - 12/70	18	92.0	16.24	7.33	.2434	1.01	7.49	924
12	1/56 - 12/70	19	92.0	11.16	6.84	.2763	.58	6.13	924
12	1/56 - 12/70	20	92.0	8.35	6.57	.2556	.32	4.85	924
12	1/56 - 12/70	21	92.0	7.37	6.52	.2634	.30	3.95	924
12	1/56 - 12/70	22	92.0	7.33	6.41	.2682	.10	3.71	924
12	1/56 - 12/70	23	92.0	8.23	7.02	.1903	.18	3.33	924
12	1/56 - 12/70	24	92.0	9.97	7.88	.1324	.48	3.50	924
12	1/56 - 12/70	25	92.0	11.89	8.68	.1841	.65	3.58	924
12	1/56 - 12/70	26	92.0	13.42	9.54	.1154	.85	3.92	924
12	1/56 - 12/70	27	92.0	14.62	10.22	.1122	1.27	4.21	924
12	1/56 - 12/70		92.0					4.45	924

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, YP, YP

STATION NUMBER - CAPE WENEDY
 MONTH OF OBSERVATION - JANUARY
 PERIOD OF OBSERVATION - 1/56 - 12/70
 ALTITUDE - 0
 ALPHABETIC - 50.0

Y = U(1, 2)
 Y = V(1, 2)
 YP = U(1, 2) + D(1) - U(1, 2)
 YP = V(1, 2) + D(1) - V(1, 2)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, YP, YP											
D ₁ Y ₁	D ₂ Y ₂	MEAN		S.D.		P		MEAN		S.D.	
		X	Y	X	Y	(X, Y)	(Y, Y)	(X, YP)	(YP, Y)	(X, YP)	(YP, Y)
12	12	0.02	0.02	2.30	2.30	-0.2412	-0.95	0.34	0.34	0.34	0.34
24	24	0.03	0.03	2.30	2.30	-0.2412	-0.95	0.34	0.34	0.34	0.34
36	36	0.01	0.01	2.30	2.30	-0.2412	-0.95	0.34	0.34	0.34	0.34
48	48	0.01	0.01	2.30	2.30	-0.2412	-0.95	0.34	0.34	0.34	0.34
60	60	0.01	0.01	2.30	2.30	-0.2412	-0.95	0.34	0.34	0.34	0.34
72	72	0.00	0.00	2.30	2.30	-0.2412	-0.95	0.34	0.34	0.34	0.34

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP											
D ₁ Y ₁	D ₂ Y ₂	MEAN		S.D.		P		MEAN		S.D.	
		X	Y	X	Y	(X, Y)	(Y, Y)	(X, YP)	(YP, Y)	(X, YP)	(YP, Y)
12	12	0.02	0.02	2.43	2.43	-0.2353	-0.93	0.35	0.35	0.35	0.35
24	24	0.03	0.03	2.43	2.43	-0.2353	-0.93	0.35	0.35	0.35	0.35
36	36	0.01	0.01	2.43	2.43	-0.2353	-0.93	0.35	0.35	0.35	0.35
48	48	0.01	0.01	2.43	2.43	-0.2353	-0.93	0.35	0.35	0.35	0.35
60	60	0.01	0.01	2.43	2.43	-0.2353	-0.93	0.35	0.35	0.35	0.35
72	72	0.00	0.00	2.43	2.43	-0.2353	-0.93	0.35	0.35	0.35	0.35

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0

X = VIAT T)
 Y = VIAT T)
 XP = VIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	2.73	7.02	.0092	.74	6.31	930								
24														
36														
48														
60														
72														

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STATION 118958 - CAPE WENDEY
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE IN' - 2
ALPHA WIND - 90.0

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
10.75	7.37	.0949	1.30	7.21	930

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.02	5.40	-.3643	-.08	5.93	-.4138	.0854	-.2839	5.08	6.60	.0977	4.76	6.22
24	.02	7.34	-.4899	-.10	7.94	-.5566	.0449	-.2437	5.09	6.21	.1155	3.19	5.72
36	-.01	8.54	-.5612	-.13	9.00	-.6307	.0583	-.1899	5.25	5.99	.1043	2.01	5.47
48	-.00	8.87	-.5775	-.13	9.56	-.6676	.0918	-.1308	5.39	5.99	.0831	1.17	5.34
60	.02	9.02	-.5825	-.14	9.61	-.6688	.1013	-.1040	5.46	5.98	.0699	.76	5.35
72	.04	9.10	-.5829	-.12	9.55	-.6646	.0976	-.0980	5.51	5.98	.0631	.64	5.38

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
11.12	1.46

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/73
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	MEAN XP	S.D. XP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.00	5.72	-.3507	-.10	6.47	-.4135	1.72	7.91	930	14.36	8.10	14.85	7.91	.1485	7.05	7.35	.1587	6.19	6.88
24	-.02	7.50	-.4576	-.12	8.62	-.5491									7.09	7.04	.1676	4.20	6.37
36	-.01	8.77	-.5263	-.15	9.67	-.6195									7.22	6.80	.1634	2.71	6.09
48	.01	9.29	-.5500	-.15	10.17	-.6529									7.34	6.72	.1547	1.92	5.94
60	.05	9.68	-.5681	-.13	10.34	-.6643									7.41	6.64	.1529	1.38	5.90
72	.07	9.92	-.5765	-.14	10.35	-.6598									7.49	6.61	.1494	1.00	5.94

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
14.64	1.86

STATION (12368) - CAPE KENNEDY
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 5
ALPHA ANGLE - 90.0

$$\begin{array}{l} X = U(A^T T) \\ Y = V(A^T T) \end{array} \quad \begin{array}{l} X_P = U(A^T T_P) \\ Y_P = V(A^T T_P) \end{array}$$

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

GIVEN x	GIVEN y
18.31	2.26

S.D. Y	N
8.72	930

MEAN
Y
2.15

**R
(X,Y)
.2007**

5.0 x 9.08

MEAN
18.02

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,Y)	R (YP,X)	MEAN YP	S.D. YP
12	12	.01	6.26	-.3435	-.10	7.03	-.4034	.1334	-.2453	9.03	8.33	.2145	.2145	6.93	7.69
24	24	-.03	8.11	-.4432	-.12	9.46	-.5489	.1353	-.2232	9.00	8.03	.2265	.2265	4.89	7.08
36	36	-.04	9.32	-.5041	-.18	10.60	-.6179	.1464	-.2007	9.07	7.76	.2282	.2282	3.40	6.74
48	48	-.02	10.57	-.5375	-.21	11.21	-.6544	.1718	-.0082	9.22	7.60	.2039	.2039	2.56	6.53
60	60	.03	10.07	-.5533	-.21	11.36	-.6844	.1557	-.1736	9.27	7.48	.2049	.2049	1.99	6.49
72	72	.06	11.00	-.5738	-.21	11.50	-.6665	.1487	-.1467	9.39	7.41	.1973	.1973	1.38	6.50

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12729) - CAPE KENNEDY
 POINT OF REFERENCE - JANUARY
 PERIOD OF RECORD - 1956 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	21.68	9.80	.2295	2.80	9.58	930						22.07	2.83					
24																		
36																		
48																		
60																		
72																		

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112853 - CAPE K. REG.
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 NUMBER OF RECORDS - 7
 ALPHA ANGLE - 30.0
 X = U(1,1)
 Y = V(1,1)
 XP = U(1,1) + DT
 YP = V(1,1) + DT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. YP
25.23	12.93	10.53	.2730	3.42	10.67	930	25.72	3.50
DT HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. YP
12	.05	5.95	-.3191	-.13	8.56	-.4098	12.94	12.24
24	.03	9.11	-.4150	-.21	11.61	-.5247	12.61	9.85
36	.03	10.74	-.4281	-.30	12.73	-.6150	12.60	9.47
48	.04	11.58	-.5178	-.35	13.41	-.6925	12.87	9.30
60	.12	12.33	-.5423	-.35	13.53	-.6625	12.93	9.14
72	.21	12.39	-.5652	-.35	13.77	-.6743	13.15	8.98
DT HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. YP
12	.05	5.95	-.3191	-.13	8.56	-.4098	12.94	12.24
24	.03	9.11	-.4150	-.21	11.61	-.5247	12.61	9.85
36	.03	10.74	-.4281	-.30	12.73	-.6150	12.60	9.47
48	.04	11.58	-.5178	-.35	13.41	-.6925	12.87	9.30
60	.12	12.33	-.5423	-.35	13.53	-.6625	12.93	9.14
72	.21	12.39	-.5652	-.35	13.77	-.6743	13.15	8.98

STATION (12668)	-	CAPE KENNEDY
MONTH OF RECORD	-	JANUARY
PERIOD OF RECORD	-	1/56 - 12/70
ALTITUDE (KM)	-	8
ALPHA ANGLE	-	90.0
X	=	U(AT 1)
Y	=	V(AT 1)
XP	=	U(AT 1)
YP	=	V(AT 1)

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 9
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + OT) - U(AT T)
 YP = V(AT T + OT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	32.14	13.29	.3108	4.17	12.79	930	-1.15	10.14	-.3976	-.3131	8.19
24							-.23	13.82	-.5485	-.4057	10.80
36							-.31	15.31	-.6106	-.4627	12.55
48							-.40	15.83	-.6399	-.5016	13.87
60							-.38	16.23	-.6574	-.5200	14.64
72							-.39	16.44	-.6668	-.5403	15.41

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	15.65	12.58	.3403	6.93	11.67
24	16.05	12.10	.3564	5.51	10.63
36	16.31	11.74	.3703	4.66	10.07
48	16.63	11.45	.3853	3.95	9.79
60	16.9	11.31	.3976	3.40	9.61
72	17.18	11.16	.3948	2.86	9.52

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12852) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 10
 ALPHA ANGLE - 80.0

X = U(1, T)
 Y = V(1, T)
 XP = U(1, T + DT) - U(1, T)
 YP = V(1, T + DT) - V(1, T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

D ² HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	35.84	14.70	.3552	4.65	13.62	930	36.41	4.65
D ² HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. YP
12	.09	8.86	-.3042	-.18	10.41	.3828	17.53	12.56
24	.05	11.97	-.4096	-.26	14.25	-.5304	17.80	11.50
36	.02	13.78	-.4628	-.43	15.93	-.5993	18.03	10.87
48	.07	14.93	-.4922	-.50	16.73	-.6351	18.36	10.48
60	.17	15.68	-.5160	-.49	17.23	-.6566	18.45	10.26
72	.31	16.42	-.5387	-.46	17.48	-.6667	18.61	10.14

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + 0T) - U(1AT T)
 YP = V(1AT T + 0T) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	39.39	15.56	.3474	4.86	14.67	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.05	9.05	-.2913	-.23	10.70	-.3846	.1464	-.0066	-.0801	19.51	14.88	.3730	5.48	13.64
24	.07	12.47	-.3983	-.34	14.75	-.5072	.1746	-.0258	-.1236	19.74	14.25	.3928	5.34	12.61
36	.09	14.19	-.4465	-.50	16.85	-.5845	.2094	-.0561	-.1569	20.15	13.89	.3941	5.04	11.86
48	.15	15.33	-.4774	-.59	17.91	-.6283	.2470	-.0956	-.1809	20.45	13.64	.3844	4.53	11.38
60	.24	16.27	-.5028	-.58	18.63	-.6573	.2411	-.1146	-.1762	20.56	13.43	.3900	3.79	11.04
72	.38	16.97	-.5237	-.56	19.03	-.6725	.2580	-.1368	-.1794	20.61	13.24	.3905	3.48	10.84

CONDICIONAL AND JOINT BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATISTICAL PACKAGE - CASE HISTORY
 ANALYSIS OF RECORDS - JOINTLY
 ANALYSIS OF RECORDS - JOINTLY
 ANALYSIS OF RECORDS - JOINTLY
 ANALYSIS OF RECORDS - JOINTLY

UNIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N
	41.80	14.97	.3410	5.08	14.84	930

CONDICIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (Y, XP)	MEAN X	S.D. X	P (XP, Y)	MEAN Y	S.D. Y	R (XP, Y)	R (Y, XP)	R (XP, YP)	MEAN YP	S.D. YP
12	.08	8.70	-.2884	-.13	9.94	-.0322	20.83	14.33	.3674	5.28	13.74					
24	.03	11.62	-.3734	-.30	14.20	-.0046	21.26	13.83	.3984	5.82	12.70					
36	.11	13.34	-.4280	-.45	16.54	-.0505	21.77	13.70	.3985	5.26	11.93					
48	.22	14.47	-.4530	-.54	17.86	-.0847	22.35	13.32	.3623	4.79	11.42					
60	.33	15.18	-.4711	-.58	18.88	-.0940	22.52	13.18	.3940	4.24	10.96					
72	.45	15.87	-.4938	-.57	19.36	-.1108	22.49	13.00	.3987	3.85	10.73					

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0
 X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	R (X, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	MEAN YP	S.D. YP	R (XP, YP)	S.D. YP
12	.11	8.29	-.3039	42.03	13.53	.3206	4.86	12.79	930	20.78	12.87	-.0699	5.77	12.04	-.1240	5.89	11.18	-.3489	5.77
24	.15	11.05	-.4011							21.29	12.36	-.0022	5.52	10.47	-.1553	5.52	10.47	-.3616	5.52
36	.16	12.74	-.4537							21.85	12.02	-.0363	5.26	10.02	-.1587	5.26	10.02	-.3711	5.26
48	.25	13.63	-.4701							22.53	11.91	-.0525	4.82	9.70	-.1589	4.82	9.70	-.3724	4.82
60	.40	14.14	-.4779							22.99	11.86	-.0769	4.92	9.53	-.1640	4.92	9.53	-.3760	4.92
72	.54	14.64	-.4859							23.39	11.80	-.0808							

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, X)	R (YP, X)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	39.88	12.30	.3140	9.27	16.88	930													
24																			
36																			
48																			
60																			
72																			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.03	9.08	.1159	-.09	6.74	.0309	19.42	11.58	.3398	5.90	10.28
24	.06	11.43	.1698	-.14	9.42	-.0038	19.67	11.09	.3507	5.24	9.84
36	.11	11.43	.2120	-.18	11.26	-.0536	19.82	10.72	.3538	4.43	9.08
48	.21	12.88	.2350	-.23	12.47	-.0892	20.44	10.56	.3543	3.92	8.64
60	.39	13.50	.2644	-.20	13.16	-.1158	20.85	10.44	.3470	3.68	8.36
72	.50	13.84	.2735	-.17	13.49	-.1232	21.28	10.39	.3469	3.91	8.21

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF Y, Y, XP, YP

STATION 112881 - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (101) - 15
 ALPHA ANGLE - 90.0

X = UIAT T;
 Y = VIAT T;
 XP = UIAT T + DT; - UIAT T;
 YP = VIAT T + DT; - VIAT T;

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN Y	S.D. Y	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
MR	35.69	10.67		4.04	9.81	.2985									
12	.06	7.46	-.3541	-.04	8.65	8.65	-.04	8.65	-.3469	.0747	17.17	9.94	.3300	5.64	9.17
24	.10	9.47	-.4465	-.10	8.68	8.68	-.10	8.68	-.4595	.1128	17.47	9.50	.3458	5.37	8.67
36	.14	10.57	-.4949	-.16	10.18	10.18	-.16	10.18	-.5423	.1875	17.84	9.24	.3378	4.48	8.21
48	.20	11.94	-.5323	-.21	11.22	11.22	-.21	11.22	-.6006	.2295	18.15	9.01	.3243	3.50	7.83
60	.31	12.15	-.5538	-.22	11.98	11.98	-.22	11.98	-.6381	.2702	18.46	8.87	.3077	3.29	7.54
72	.42	12.40	-.5678	-.22	12.33	12.33	-.22	12.33	-.6594	.2686	18.75	8.84	.3109	3.49	7.39

GLIMCORVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE (FT) - 16
 ALPHA ANGLE - 50.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T - DT)
 YP = VIAT T - DT)

GLIMCORVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y											
	30.87	8.25	.2728	3.35	8.47	830	31.11	3.44											
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP					
DT																			
12	.04	7.15	-.3909	-.04	9.30	-.3561	.0742	.0015	-.1504	14.84	8.43	.3050	5.73	7.87					
24	.07	8.31	-.4566	-.11	7.56	-.4630	.0913	.0785	-.1680	14.74	8.14	.3214	5.52	7.44					
36	.10	9.38	-.5096	-.15	8.83	-.5457	.1242	.0194	-.1839	15.17	7.90	.3145	4.60	7.03					
48	.18	10.10	-.5408	-.18	9.73	-.6030	.1086	-.0222	-.1934	15.24	7.73	.3077	4.07	6.71					
60	.29	10.81	-.5738	-.19	10.53	-.6481	.2095	-.0733	-.1840	15.70	7.95	.3040	3.20	6.43					
72	.41	10.90	-.5791	-.23	10.78	-.6834	.2262	-.0911	-.1811	15.87	7.92	.2924	3.07	6.32					

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (M) - 17
ALPHA ANGLE - 90.0

X	Y	-	U(AT)	T)
		-	V(AT)	T)

$$\begin{aligned} X_P &= U(AT \div DT) - U(AT \ T) \\ Y_P &= V(AT \ T \div DT) - V(AT \ T) \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
24.73	8.44	.2632	2.57	7.34	830

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y		
	24.73	8.44	.2632	2.57	7.34	930		15.25	2.56		
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (YP,X)		S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
12	.02	6.65	-.3949	-.3726	.0882	-.1790		7.66	.2821	4.66	6.75
24	.05	7.94	-.4751	-.4704	.0909	-.1928		7.32	.3076	4.21	6.40
36	.11	8.81	-.5227	.7.74	.1265	-.1945		7.11	.3087	3.60	6.03
48	.17	9.59	-.5623	-.6183	.1158	-.1704		6.92	.3253	2.91	5.73
60	.30	9.69	-.5948	-.9.14	.0200	-.1411		6.92	.3136	2.63	5.52
72	.42	10.20	-.5945	-.6732	.1517	-.1702		6.95	.3146	2.29	5.41

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (120858) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 18
 ALPHA ANGLE - 30.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, XP)	S.D. X	MEAN Y	S.D. Y	N
12	.01	6.60	-.4261	7.78	1.82	5.82	530
24	.04	7.35	-.4745				
36	.13	8.35	-.5355				
48	.19	8.94	-.5711				
60	.30	9.49	-.6035				
72	.42	9.78	-.6336				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)
12	8.95	7.00	.3193	2.42	5.34	
24	9.04	6.75	.3306	2.98	5.05	
36	9.15	6.48	.3380	2.69	4.73	
48	9.17	6.33	.3527	2.27	4.50	
60	9.28	6.15	.3522	1.93	4.28	
72	9.44	6.12	.3495	1.65	4.20	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMT) - 19
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	12.73	7.35	.2669	1.07	4.55	930						13.02	1.25
12													
24													
36													
48													
60													
72													

QUADEVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (101) - 20
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADEVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	QUADEVARIATE NORMAL STATISTICS OF X, Y				QUADEVARIATE NORMAL STATISTICS OF XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (Y, YP)
12	8.73	5.82	.2340	.53	3.84	930						
24												
36												
48												
60												
72												

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 21
ALPHA ANGLE - 90.0

X	Y
•	•
U(1)	V(1)
T)	T)

$$\begin{aligned} x_p &= U(AT \cdot 1 + DT) - U(AT \cdot T) \\ y_p &= V(AT \cdot 1 + DT) - V(AT \cdot T) \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,Y.P

MEAN \bar{X}	S.D. σ_x	R (x, y)	MEAN \bar{Y}	S.D. σ_y	N
5.45	7.05	.2309	.23	3.61	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X _P	S.D. X _P	R (X, X _P)	MEAN Y _P	S.D. Y _P	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. X _P	MEAN X _P	R (X _P , Y _P)	MEAN Y _P	S.D. Y _P
12	- .00	6.39	- .4529	.03	3.99	.1234	-.5527	-.0413	-.0785	6.29	.2698	6.29	3.34	-.2698	.17	3.01
24	.01	6.71	-.4834	.01	4.07	.1464	-.5646	-.0552	-.1016	6.19	.2580	6.19	3.31	-.2580	.15	2.98
36	.06	7.19	-.5138	.02	4.47	.1518	-.6129	.0075	-.1827	6.03	.2714	6.03	3.37	-.2714	.38	2.83
48	.12	7.51	-.5393	.02	4.55	.1568	-.6175	-.0463	-.1311	5.94	.2676	5.94	3.37	-.2676	.22	2.67
60	.15	7.98	-.5393	.05	4.91	.1732	-.6713	-.0634	-.1429	5.93	.2652	5.93	3.42	-.2652	.24	2.67
72	.16	8.10	-.5702	.03	4.96	.1970	-.6745	-.0865	-.1588	5.79	.2479	5.79	3.46	-.2479	.20	2.66

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KHI) - 22
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	24	5.32	7.75	.2508	.29	3.72	930						4.97	.51		
12	24	.01	6.35	-.4105	-.5459	.1474	-.0319	-.5459	4.05	.02	.02	7.06	.2841	.19	.19	3.11
36	48	.03	7.12	-.4578	-.5294	.1611	-.0722	-.5294	3.93	.01	.01	6.89	.2789	.08	.08	3.15
60	72	.09	8.02	-.5140	-.6305	.2105	-.1013	-.6305	4.69	.02	.02	6.82	.3047	.03	.03	2.88
72		.11	8.45	-.5422	-.6570	.2088	-.1167	-.6570	4.50	.02	.02	6.81	.2657	.11	.11	2.96
					-.6377	.2350	-.1235	-.6377	4.82	.01	.01	6.65	.2703	.10	.10	2.80
												6.51	.2531	.10	.10	2.86

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	S.D. YP
12	-0.05	5.74	-0.3500	.02	4.05	-0.5150	.54	3.95	930	2.74	7.78	.2810	.05	3.38	-.0220	2.74	7.78	.2810	3.38
24	-0.08	6.35	-0.3869	.05	4.09	-0.5248				2.72	7.66	.2706	.09	3.36	-.0527	2.72	7.66	.2706	3.36
36	-0.05	6.71	-0.4078	.09	4.56	-0.5854				2.73	7.58	.2657	.21	3.20	-.0867	2.73	7.58	.2657	3.20
48	-0.06	7.07	-0.4321	.10	4.66	-0.6012				2.71	7.49	.2533	.12	3.15	-.1280	2.71	7.49	.2533	3.15
60	-0.01	7.74	-0.4719	.11	5.21	-0.6686				2.76	7.32	.2501	.11	2.93	-.1715	2.76	7.32	.2501	2.93
72	.07	8.16	-0.4971		5.14	-0.6605				2.79	7.21	.2331	.11	2.96	-.1826	2.79	7.21	.2331	2.96

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP						
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y		MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP		
	5.18	9.13	.2078	.64	3.68	930	4.35	1.00								
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)							
12	-.06	5.63	-.3093	.02	4.07	-.5257	.2071	-.0886	-.0779	2.96	8.68	.2137	.21	3.30		
24	-.11	6.36	-.3508	.03	4.09	-.5269	.1932	-.1201	-.0593	2.94	8.55	.2135	.10	3.29		
36	-.10	7.08	-.3914	.07	4.69	-.5922	.1982	-.1289	-.0795	2.93	8.40	.2104	.15	3.12		
48	-.11	7.56	-.4216	.10	4.67	-.6441	.2436	-.1605	-.1064	2.90	8.28	.1873	.16	3.15		
60	-.06	8.14	-.4544	.11	5.06	-.6354	.2793	-.1862	-.1348	2.93	8.13	.1716	.19	2.99		
72	-.03	8.51	-.4766	.13	4.99	-.6272	.2289	-.1685	-.1139	2.93	8.02	.1817	.16	3.02		

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) - 25
 ALPHA ANGLE - 90.0

$X = U(AT \ T)$
 $Y = V(AT \ T)$
 $XP = U(AT \ T + DT) - U(AT \ T)$
 $YP = V(AT \ T + DT) - V(AT \ T)$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-0.03	5.68	-0.2913	.00	4.07	.1660	.01	4.17	930	5.43	1.18	3.52	9.22	.1795	.27	3.63
24	-0.05	5.93	-.3093	.01	4.21							3.52	9.17	.1748	.17	3.59
36	-0.08	7.05	-.3631	-.00	4.72							3.50	8.98	.1836	.21	3.43
48	-0.08	7.44	-.3864	-.02	4.78							3.50	8.89	.1658	.14	3.40
60	-0.06	8.77	-.4303	-.03	5.25							3.51	8.69	.1635	.13	3.23
72	-0.05	8.67	-.4563	-.05	5.27							3.47	8.57	.1394	.11	3.22

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 26
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = -VIAT T)
 XP = UIAT T + DT)
 YP = -VIAT T + DT)

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y		
	7.60	11.16	.1782	1.04	4.60	930	6.87	1.43		
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
DT										
12	-.37	6.13	-.2703	-.4850	1.590	-.0294	4.21	10.74	.13	4.02
24	-.14	7.29	-.3177	-.4980	2.111	-.0310	4.24	10.57	.04	3.98
36	-.18	8.29	-.3687	-.5759	1.866	-.0316	4.15	10.36	.04	3.74
48	-.20	8.66	-.3916	-.5602	2.484	-.0525	4.07	10.26	.10	3.58
60	-.20	9.41	-.4294	-.6283	2.681	-.0688	4.06	10.09	.07	3.59
72	-.20	10.04	-.4566	-.6166	2.674	-.0539	4.06	9.90	.03	3.59
84										
96										
108										
120										

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (101) - 27
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	8.20	12.53	.1350	1.56	5.28	930

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.06	6.31	-.2500	-.00	4.77	-.4500	4.54	12.13	.1317	.29	4.71
24	-.15	7.66	-.2969	-.07	5.17	-.5080	4.64	11.96	.1217	.07	4.53
36	-.15	8.63	-.3446	-.07	5.80	-.5667	4.52	11.75	.1132	.09	4.33
48	-.19	9.41	-.3772	-.05	5.93	-.5801	4.47	11.59	.0904	.15	4.28
60	-.23	10.26	-.4084	-.08	6.44	-.6251	4.48	11.41	.0749	.11	4.09
72	-.19	10.91	-.4375	-.10	6.85	-.6370	4.50	11.24	.0701	.09	4.03

BI VARIATE NORMAL STATISTICS OF X, Y

STATION (112868) - CAPE KENNEDY

X = UAT T1
Y = VUAT T1

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
1	1/55 - 12/70	0	90.0	.66	2.90	-.2412	-.95	3.30	930
1	1/55 - 12/70	1	90.0	2.73	7.02	.0092	.74	6.31	930
1	1/55 - 12/70	2	90.0	7.03	7.06	.0462	1.10	6.40	930
1	1/55 - 12/70	3	90.0	10.75	7.37	.0349	1.30	7.21	930
1	1/55 - 12/70	4	90.0	14.36	8.10	.1425	1.72	7.91	930
1	1/55 - 12/70	5	90.0	18.02	9.08	.2007	2.15	8.72	930
1	1/55 - 12/70	6	90.0	21.68	9.90	.2295	2.60	9.58	930
1	1/55 - 12/70	7	90.0	25.23	10.93	.2790	3.42	10.67	930
1	1/55 - 12/70	8	90.0	28.68	11.95	.3017	3.75	11.74	930
1	1/55 - 12/70	9	90.0	32.14	13.29	.3108	4.17	12.79	930
1	1/55 - 12/70	10	90.0	35.84	14.70	.3532	4.66	13.62	930
1	1/55 - 12/70	11	90.0	39.39	15.56	.3474	4.86	14.67	930
1	1/55 - 12/70	12	90.0	41.80	14.97	.3410	5.08	14.64	930
1	1/55 - 12/70	13	90.0	42.03	13.53	.3206	4.86	12.78	930
1	1/55 - 12/70	14	90.0	39.89	12.30	.3140	4.27	10.86	930
1	1/55 - 12/70	15	90.0	35.69	10.67	.2985	4.04	9.81	930
1	1/55 - 12/70	16	90.0	30.67	9.25	.2786	3.56	8.47	930
1	1/55 - 12/70	17	90.0	24.73	8.44	.2632	2.57	7.34	930
1	1/55 - 12/70	18	90.0	18.31	7.79	.2955	1.82	5.82	930
1	1/55 - 12/70	19	90.0	12.73	7.35	.2863	1.07	4.55	930
1	1/55 - 12/70	20	90.0	8.73	6.82	.2940	.53	3.84	930
1	1/55 - 12/70	21	50.0	6.45	7.06	.2309	.23	3.61	930
1	1/55 - 12/70	22	90.0	5.32	7.75	.2506	.29	3.72	930
1	1/55 - 12/70	23	90.0	4.93	8.30	.2469	.54	3.95	930
1	1/55 - 12/70	24	90.0	5.18	9.13	.2076	.64	3.88	930
1	1/55 - 12/70	25	90.0	5.23	9.64	.1660	.81	4.17	930
1	1/55 - 12/70	26	90.0	7.60	11.16	.1782	1.04	4.60	930
1	1/55 - 12/70	27	90.0	8.20	12.53	.1390	1.56	5.28	930

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 0
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
12	.35	3.26	-.2782	-.30	3.60	848								
24														
36														
48														
60														
72														

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
12	.35	3.26	-.2782	-.30	3.60	848								
24														
36														
48														
60														
72														

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (1001) - 1
 ALPHA-ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	3.01	7.22	-0.0335	1.72	6.61	848								
24														
36														
48														
60														
72														

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.07	5.99	-.3751	.09	6.02	-.0181	1.51	6.70	848	3.47	6.78	-.0257	3.73	5.48
24	.14	9.05	-.5134	.05	7.91					3.80	8.35	-.0490	2.30	5.09
36	.13	9.19	-.5966	.03	8.89					3.96	6.08	-.0700	1.53	4.89
48	.12	9.69	-.6287	.05	9.17					4.05	5.96	-.0864	1.12	4.86
60	.15	10.02	-.6552	.06	9.33					4.07	5.81	-.0844	1.00	4.80
72	.15	10.35	-.6812	.04	9.56					4.07	5.65	-.0816	.82	4.66

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1126681 - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 3
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	12.05	8.26	.0379	1.75	7.36	848	11.81	2.40
DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, Y)	MEAN XP	S.D. XP
	R (X, XP)	R (Y, YP)	R (XP, Y)	R (YP, X)	R (YP, Y)	R (XP, X)	MEAN YP	S.D. YP
12	.07	.09	.1391	-.4308	.2659	-.3197	6.03	7.38
24	.14	.07	.1315	-.5632	.1922	-.2500	6.10	7.00
36	.20	.04	.1327	-.6273	.1034	-.2351	6.03	6.76
48	.23	.04	.1226	-.6519	.0510	-.1865	6.03	6.63
60	.25	.04	.1081	-.6719	.0506	-.1609	6.01	6.53
72	.25	.02	.1026	-.6991	.0259	-.1331	6.02	6.37

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (X01) - 4
 ALPHA ANGLE - 22.0

$X = U(AT \ T)$
 $Y = V(AT \ T)$
 $XP = U(AT \ T + DT) - U(AT \ T)$
 $YP = V(AT \ T + DT) - V(AT \ T)$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN Y	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	15.46	9.18	-.0035	2.26	8.05	848	14.92	2.95

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT MR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.10	8.19	-.3345	.10	6.97	-.4314	7.85	8.37	-.0376	8.75	8.82
24	.18	8.26	-.4460	.13	8.98	-.5488	8.00	7.98	-.0682	4.48	8.41
36	.22	9.37	-.5137	.12	9.97	-.6098	7.82	7.74	-.0579	3.20	8.23
48	.27	9.79	-.5490	.09	10.43	-.6335	7.75	7.58	-.0524	2.67	8.11
60	.29	10.24	-.5802	.05	10.85	-.6609	7.69	7.41	-.0422	2.43	8.93
72	.29	10.93	-.6216	.03	11.00	-.6784	7.71	7.16	-.0413	1.88	5.88

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KPH) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN		S.D. X	R		MEAN Y	S.D. Y	N	GIVEN		MEAN XP	S.D. XP	R (XP, YP)	S.D. YP	MEAN YP	S.D. YP
	X	Y		(X, Y)	X				Y							
12	.14	19.12	10.18	.0155	2.84	8.97	848		18.45	3.43	9.68	9.46	-.0008	8.69	7.65	7.65
24	.28										9.99	9.05	-.0244	5.59	7.19	7.19
36	.34										9.83	8.78	-.0123	4.05	7.01	7.01
48	.41										9.73	8.54	-.0045	3.41	6.88	6.88
60	.43										9.67	8.31	-.0046	3.02	6.74	6.74
72	.43										9.59	8.06	.0033	2.59	6.70	6.70

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128681 - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KOH) - 6
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	S.D. YP
12	.16	8.93	-.2951	.12	8.04	-.4223	3.18	9.51	848	22.34	4.08	.0885	12.21	10.46	8.81
24	.32	9.38	-.4085	.14	10.45	-.5411						.0760	12.33	10.01	5.83
36	.39	10.69	-.4784	.18	11.52	-.5851						.0819	12.12	9.69	4.42
48	.47	11.43	-.5222	.18	12.05	-.6113						.0828	11.91	9.43	3.72
60	.52	12.18	-.5552	.14	12.44	-.6322						.0784	11.90	9.18	3.27
72	.54	12.76	-.5921	.09	12.94	-.6409						.0754	11.80	8.94	2.95

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12688) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFT) - 7
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, Y)	R (YP, X)
12	26.83	12.53	.1524	3.58	10.33	348	14.30	11.86	.1552	8.56	9.11	-.4255	.1437	-.1811
24							14.41	11.38	.1447	5.82	8.44	-.5517	.0735	-.1911
36							14.23	11.00	.1395	4.51	8.15	-.6003	.0249	-.1916
48							13.87	10.68	.1471	3.75	7.97	-.6270	.0008	-.1736
60							13.66	10.38	.1538	3.50	7.79	-.6489	-.0075	-.1700
72							13.64	10.10	.1461	3.17	7.78	-.6507	.1819	-.1767

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN
X
25.96
4.49

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 8
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.17	7.95	-.2793	.11	9.20	-.4059	3.79	11.35	848	16.27	13.32	.1949	9.08	10.17
24	.38	10.86	-.3834	.14	12.33	-.5390				16.19	12.83	.2018	6.11	9.41
36	.48	12.66	-.4588	.17	14.00	-.6021				15.87	12.37	.2000	4.40	8.98
48	.56	13.81	-.5135	.20	14.83	-.6345				15.54	11.97	.1995	3.67	8.72
60	.58	14.65	-.5559	.17	15.24	-.6514				15.26	11.60	.1981	3.43	8.56
72	.62	15.44	-.5890	.13	15.40	-.6595				15.18	11.28	.2015	3.14	8.49

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
GIVEN X	29.58	4.67			
GIVEN Y				4.67	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 9
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	34.59	15.74	.2343	4.11	12.35	848	33.44	4.88
	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	.16	8.65	-.2735	.11	9.76	-.3941	18.28	15.06
24	.36	11.56	-.3698	.11	13.30	-.5312	18.10	14.55
36	.48	13.43	-.4403	.17	15.09	-.5921	17.69	14.08
48	.59	14.85	-.4952	.20	16.04	-.6278	17.45	13.63
60	.66	15.86	-.5383	.17	16.41	-.6423	17.18	13.23
72	.71	16.71	-.5716	.11	16.65	-.6521	17.04	12.88

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPT KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KOH) - 10
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

GIVEN X
 GIVEN Y
 36.89 4.76

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

N 848

S.D. Y 13.76

MEAN Y 4.15

R (X, Y) .2549

S.D. X 16.92

MEAN X 38.27

R (X, XP) -.2686

S.D. XP 8.93

MEAN XP .16

R (Y, YP) -.3807

S.D. YP 10.56

MEAN YP .12

R (XP, Y) .0131

S.D. (XP, YP) .1337

R (XP, X) -.0890

MEAN XP 19.68

S.D. YP 19.75

R (XP, YP) .2579

MEAN YP 5.49

S.D. YP 12.69

R (Y, YP) -.5221

S.D. YP 14.57

MEAN YP .12

R (XP, Y) -.0236

S.D. (XP, YP) .1544

R (XP, X) -.1110

MEAN XP 19.60

S.D. YP 19.60

R (XP, YP) .2680

MEAN YP 3.33

S.D. YP 11.12

R (Y, YP) -.5875

S.D. YP 16.47

MEAN YP .25

R (XP, Y) -.0711

S.D. (XP, YP) .1881

R (XP, X) -.1322

MEAN XP 19.32

S.D. YP 19.32

R (XP, YP) .2692

MEAN YP 2.91

S.D. YP 10.76

R (Y, YP) -.6364

S.D. YP 17.53

MEAN YP .32

R (XP, Y) -.1072

S.D. (XP, YP) .2051

R (XP, X) -.1422

MEAN XP 19.14

S.D. YP 19.22

R (XP, YP) .2690

MEAN YP 2.69

S.D. YP 10.61

R (Y, YP) -.6421

S.D. YP 18.07

MEAN YP .27

R (XP, Y) -.1073

S.D. (XP, YP) .1958

R (XP, X) -.1414

MEAN XP 19.22

S.D. YP 19.22

R (XP, YP) .2723

MEAN YP 2.48

S.D. YP 10.55

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

Y - U(AT T)
 Y - V(AT T)

XP - U(AT T + DT) - U(AT T)
 YP - V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT HR																	
12	42.03	17.71	.2767	4.15	14.98	848											
24																	
36																	
48																	
60																	
72																	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12068) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 12
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	44.66	17.25	.2765	4.30	14.65	848														
24																				
36																				
48																				
60																				
72																				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/53 - 12/70
 ALTITUDE (M) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.09	9.67	44.51	15.90	.3462	4.25	12.82	848	22.50	15.12	-.0592	21.05	13.22	-.1996	43.27	4.70	21.28	13.54	.3531	2.69	10.12
24	.11	11.53							22.37	14.66	-.0971	21.05	13.22	-.1996			21.28	13.54	.3531	2.51	10.07
36	.26	13.59							22.20	14.21	-.1382	21.05	13.22	-.1996			21.28	13.54	.3531	2.42	10.61
48	.31	14.39							22.49	13.83	-.1758	21.05	13.22	-.1996			21.28	13.54	.3531	2.56	10.25
60	.29	15.13							21.49	13.83	-.1923	21.05	13.22	-.1996			21.28	13.54	.3531	2.69	10.12
72	.28	15.93							21.05	13.22	-.1996	21.05	13.22	-.1996			21.05	13.22	.3537	2.51	10.07

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.08	9.07	-.3294	.09	7.75	-.3475	3.82	11.13	848	21.71	13.05	.3299	3.42	10.43
24	.14	10.98	-.3950	.14	10.57	-.4220				21.87	12.67	.3320	3.94	9.79
36	.23	12.65	-.4562	.14	12.52	-.5553				21.92	12.27	.3258	3.38	9.24
48	.24	13.40	-.4957	.17	13.53	-.5989				21.28	11.94	.3115	2.97	8.90
60	.18	13.99	-.5288	.06	14.02	-.6215				20.93	11.70	.3180	2.92	8.71
72	.22	14.84	-.5562	.03	14.19	-.6280				20.80	11.45	.3234	2.86	8.65

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 40.23
 4.23

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12068) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT) - U(1AT T)
 YP = V(1AT T + DT) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP,YP)	MEAN YP	S.D. YP
12	.02	8.17	-.3345	.09	6.58	.2315	3.12	9.31	848	19.15	11.26	.2445	4.62	8.68	35.54	3.51	.2445	4.62	8.68
24	.14	9.70	-.3997	.15	8.91					19.35	10.94	.2423	4.59	8.17			.2423	4.59	8.17
36	.26	10.86	-.4531	.19	10.40					19.37	10.68	.2298	3.51	7.76			.2298	3.51	7.76
48	.27	11.51	-.4881	.25	11.06					19.00	10.45	.2122	2.99	7.57			.2122	2.99	7.57
60	.27	12.14	-.5218	.22	11.47					18.78	10.20	.2124	3.21	7.41			.2124	3.21	7.41
72	.27	12.68	-.5472	.21	11.80					18.74	9.99	.2059	3.30	7.28			.2059	3.30	7.28

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAVE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 16
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	R (X, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	31.60	10.60	.1868	2.82	8.17	.848								
24														
36														
48														
60														
72														

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 17
 ALPHA ANGLE - 90.8

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	STATISTICS OF X				STATISTICS OF Y				STATISTICS OF XP				STATISTICS OF YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,X)	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	OIVEN X	OIVEN Y	
12	25.56	9.47	.1912	2.08	6.94	848												24.78	2.20	
24																				
36																				
48																				
60																				
72																				

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

GIVEN X 18.46
 GIVEN Y 1.43

N 848

S.D. Y 5.56

MEAN Y 1.41

R (X, Y) .3013

S.D. X 8.67

MEAN X 18.13

S.D. XP 7.69

MEAN XP .00

R (X, XP) -.4407

S.D. YP 4.51

MEAN YP .05

R (Y, YP) -.4012

S.D. (XP, YP) .2196

R (XP, Y) .0029

R (YP, X) -.2002

MEAN XP 10.17

S.D. XP 7.73

R (XP, YP) .3187

MEAN YP 1.98

S.D. YP 5.15

R (XP, YP) .3183

MEAN YP 1.87

S.D. YP 4.93

R (XP, YP) .3092

MEAN YP 1.40

S.D. YP 4.73

R (XP, YP) .3105

MEAN YP 1.20

S.D. YP 4.57

R (XP, YP) .3128

MEAN YP 1.01

S.D. YP 4.51

R (XP, YP) .3233

MEAN YP .87

S.D. YP 4.47

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 20
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (X, Y)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, Y)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	8.19	7.58	.2590	.70	3.95	8.8											
24																	
36																	
48																	
60																	
72																	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12											
24											
36											
48											
60											
72											

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12822) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (PM) - 2
 ALPHA ANGLE - 90.0

X = U(1, T)
 Y = V(1, T)
 XP = U(1, T) + DT
 YP = V(1, T) + DT

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	P (Y, X)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
DT	5.16	7.47	.2325	.20	4.41	.848								
12	-.03	6.43	-.4239	-.5083	.1375	-.0604	3.44	6.74	.2587	.28	3.79			
24	-.08	7.05	-.4717	-.5453	.1502	-.0604	3.44	6.58	.2601	.26	3.69			
36	-.12	7.63	-.5120	-.6435	.1372	-.0502	3.42	6.41	.2783	.28	3.37			
48	-.20	7.91	-.5720	-.6452	.1488	-.0393	3.41	6.36	.2717	.33	3.36			
60	-.19	8.24	-.5456	-.6747	.1565	-.0732	3.42	6.24	.2700	.36	3.24			
72	-.28	8.33	-.5448	-.6621	.1693	-.0245	3.41	6.23	.2619	.40	3.28			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128881 - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	4.26	7.90	.2223	-12	4.08	848	2.46	-.45
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	-.02	6.50	-.4107	.00	4.34	-.5305	3.08	7.20
24	-.06	6.83	-.4359	-.02	4.38	-.5331	3.08	7.10
36	-.12	7.94	-.4815	-.02	5.10	-.6239	3.00	6.92
48	-.14	7.68	-.4936	-.00	4.90	-.5964	3.01	6.85
60	-.18	8.36	-.5365	.01	5.46	-.6711	2.97	6.66
72	-.22	8.57	-.5455	.00	5.18	-.6368	2.97	6.51
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN YP	S.D. YP	R (XP, YP)	R (YP, X)	R (XP, Y)	R (YP, X)	MEAN YP	S.D. YP
12	.18	3.44	-.0768	-.0768	-.0122	-.0768	.18	3.44
24	.21	3.43	-.1357	-.1357	-.0322	-.1357	.21	3.43
36	.17	3.17	-.1152	-.1152	-.0435	-.1152	.17	3.17
48	.21	3.25	-.1441	-.1441	-.0244	-.1441	.21	3.25
60	.19	3.00	-.1207	-.1207	-.0355	-.1207	.19	3.00
72	.17	3.13	-.1425	-.1425	-.0723	-.1425	.17	3.13

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12338) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	COND. BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	-0.04	8.40	-0.3555	-0.04	4.75	-0.5878	0.13	4.00	848	1.70	-0.13	0.3055	0.26	3.32	
24	-0.12	5.94	-0.314	-0.03	3.94	-0.4803						-0.0221	0.24	3.50	
36	-0.17	7.54	-0.423	-0.13	5.12	-0.6316						-0.1023	0.22	3.03	
48	-0.24	7.63	-0.4754	-0.16	4.65	-0.5697						-0.1033	0.21	3.28	
60	-0.31	7.95	-0.4931	-0.16	5.45	-0.6698						-0.1036	0.19	2.95	
72	-0.40	7.97	-0.4956	-0.17	5.15	-0.6275						-0.0948	0.18	3.11	

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, XP)	MEAN YP	S.D. YP
12	4.05	8.35	.2162	.26	3.81	848								
24														
36														
48														
60														
72														

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	3.11	7.73	.2493	.29	3.18						
24	3.09	7.58	.2400	.27	3.23						
36	3.05	7.46	.2689	.24	2.90						
48	3.06	7.37	.2601	.20	3.06						
60	3.04	7.31	.2698	.19	2.78						
72	3.04	7.22	.2586	.20	2.93						

STATION: (12868) - CAPE KENNEDY
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 25
ALPHA ANGLE - 90.0

$$\begin{array}{l} X \\ Y \end{array} = \begin{array}{l} U(AT) \\ V(AT) \end{array} T$$
$$\begin{aligned} \text{XP} &= \text{U(AT T} \diamond \text{DT)} - \text{U(AT T)} \\ \text{YP} &= \text{V(AT T} \diamond \text{DT)} - \text{V(AT T)} \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	R	GIVEN X	GIVEN Y
4.36	9.14	.2320	.06	3.70	.848	1.94	-.33
MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP
-.07	6.08	-.3413	-.5418	4.01	-.0347	3.32	8.59
-.12	6.77	-.3852	-.5249	4.01	-.0514	3.28	8.43
-.15	7.37	-.4288	-.6182	4.58	-.1282	3.23	8.26
-.15	7.82	-.4556	-.6207	4.60	-.1063	3.23	8.14
-.19	8.07	-.4698	-.6704	4.96	-.1625	3.20	8.07
-.19	8.36	-.4844	-.6497	4.82	-.1648	3.20	7.99
MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
.21	3.11	-.0514	3.32	8.59	.3317	.21	3.11
.19	3.15	-.0181	3.28	8.43	.3513	.19	3.15
.17	2.90	-.0502	3.23	8.26	.3501	.17	2.90
.17	2.90	-.0419	3.23	8.14	.3633	.17	2.90
.16	2.74	-.0535	3.20	8.07	.3572	.16	2.74
.15	2.80	-.0444	3.20	7.99	.3563	.15	2.80

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/55 - 12/70
ALTITUDE (KMH) - 26
ALPHA ANGLE - 90 0

X = U(AT T)
Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	
	5.02	9.73	.2482	.12	3.94	848	2.52	-.26							
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (YP, X)							
12	-.03	6.10	-.3234	-.03	4.23	-.5427	-.1292	-.0692		3.68	9.19	.2640	.23	3.31	
24	-.07	6.68	-.3724	-.03	4.36	-.5610	-.1262	-.0458		3.59	9.03	.2764	.19	3.26	
35	-.12	7.28	-.4045	-.09	4.97	-.6475	-.1190	-.0150		3.57	8.90	.3164	.14	2.99	
48	-.16	7.90	-.4246	-.12	4.86	-.6341	-.0897	-.0013		3.59	8.81	.3289	.13	3.04	
60	-.20	8.37	-.4434	-.13	5.21	-.6781	-.1322	-.0068		3.58	8.69	.3305	.11	2.88	
72	-.25	8.83	-.4701	-.11	5.15	-.6784	-.1104	-.0229		3.56	8.58	.3228	.13	2.88	

STATION (12868)	- CAPE KENNEDY	X = VIAT T)
MONTH OF RECORD	- FEBRUARY	Y = VIAT T)
PERIOD OF RECORD	- 1/56 - 12/70	XP = VIAT T + DT) - VIAT T)
ALTITUDE (KM)	- 27	YP = VIAT T + DT) - VIAT T)
ALPHA ANGLE	- 90.0	

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BIVARIATE NORMAL STATISTICS OF X,Y

STATION (12868) - CAPE KENNEDY

X = U(IAT T)
Y = V(IAT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
2	1/56 - 12/70	0	90.0	.55	3.23	.0732	-.30	3.60	848
2	1/56 - 12/70	1	90.0	3.81	7.22	-.0335	1.72	6.61	848
2	1/56 - 12/70	2	90.0	8.15	7.73	-.0181	1.51	6.70	848
2	1/56 - 12/70	3	90.0	12.05	8.26	.0079	1.75	7.36	848
2	1/56 - 12/70	4	90.0	15.46	9.18	-.0035	2.26	8.05	848
2	1/56 - 12/70	5	90.0	19.12	10.18	.0155	2.64	8.97	848
2	1/56 - 12/70	6	90.0	23.14	11.15	.0338	3.18	9.51	848
2	1/56 - 12/70	7	90.0	26.89	12.53	.1524	3.58	10.33	848
2	1/56 - 12/70	8	90.0	30.63	14.01	.1902	3.79	11.35	848
2	1/56 - 12/70	9	90.0	34.59	15.74	.2343	4.11	12.35	848
2	1/56 - 12/70	10	90.0	38.27	16.92	.2549	4.15	13.76	848
2	1/56 - 12/70	11	90.0	42.03	17.71	.2767	4.15	14.98	848
2	1/56 - 12/70	12	90.0	44.56	17.25	.2765	4.30	14.65	848
2	1/56 - 12/70	13	90.0	44.51	15.90	.3462	4.25	12.92	848
2	1/56 - 12/70	14	90.0	41.43	13.82	.3179	3.82	11.13	848
2	1/56 - 12/70	15	90.0	36.59	11.99	.2316	3.12	9.31	848
2	1/56 - 12/70	16	90.0	31.60	10.60	.1868	2.82	8.17	848
2	1/56 - 12/70	17	90.0	25.58	9.47	.1912	2.08	6.94	848
2	1/56 - 12/70	18	90.0	19.13	8.67	.3013	1.41	5.66	848
2	1/56 - 12/70	19	90.0	13.20	7.97	.2650	.01	4.55	848
2	1/56 - 12/70	20	90.0	8.19	7.59	.2690	.70	3.93	848
2	1/56 - 12/70	21	90.0	5.46	7.47	.2325	.20	4.41	848
2	1/56 - 12/70	22	90.0	4.26	7.90	.2223	-.12	4.06	848
2	1/56 - 12/70	23	90.0	3.74	8.06	.2440	.13	4.00	848
2	1/56 - 12/70	24	90.0	4.05	8.35	.2162	.26	3.81	848
2	1/56 - 12/70	25	90.0	4.35	9.14	.2920	.06	3.70	848
2	1/56 - 12/70	26	90.0	5.02	9.73	.2482	.12	3.94	848
2	1/56 - 12/70	27	90.0	5.64	10.54	.1685	.23	3.98	848

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112658) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 0
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.07	2.49	-.5422	.01	3.75	-.5241	.00	3.57	930	.01	2.59	-.2099	.06	2.93
24	-.07	2.81	-.5890	.03	4.48	-.6239	.00	3.57	930	-.00	2.51	-.2308	.07	2.68
36	-.08	4.38	-.6729	.01	4.99	-.5945	.00	3.57	930	-.01	2.34	-.1962	.05	2.52
48	-.09	5.43	-.6810	.02	5.06	-.7009	.00	3.57	930	-.02	2.34	-.1895	.05	2.51
60	-.10	4.62	-.7073	.03	5.13	-.7232	.00	3.57	930	-.02	2.46	-.1528	.05	2.46
72	-.13	4.52	-.6923	.01	5.09	-.7193	.00	3.57	930	-.04	2.31	-.1735	.04	2.48

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN
X
GIVEN
Y
-.05
.08

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - MARCH
PERIOD OF RECORD 1/56 - 12/79
ALTITUDE (KM) - 1
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N
12	-.04	5.96	-.4247	-.03	5.93	.0096	1.64	6.24	930
24	-.11	8.29	-.5872	-.02	7.63				
36	-.12	9.39	-.6605	-.03	8.60				
48	-.16	9.69	-.6810	-.08	8.78				
60	-.21	9.05	-.6893	-.11	8.83				
72	-.31	9.05	-.6903	-.15	8.76				

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)
12	.83	5.88	.0122	2.13	4.91	
24	1.07	5.34	.0222	1.95	4.58	
36	1.31	5.18	.0295	1.15	4.38	
48	1.39	5.13	.0348	.97	4.36	
60	1.43	5.10	.0364	.84	4.37	
72	1.40	5.10	.0427	.77	4.40	

STATION (1268) - CAPE KENEDY
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE IN FEET - 2
LATITUDE - 30.0

$$\begin{array}{l} X = U(AT) \\ Y = V(AT) \end{array} \quad \begin{array}{l} XP = U(AT) \\ YF = V(AT) \end{array}$$
$$\begin{aligned} \mathbf{x}_P &= \mathbf{U}(\mathbf{A}^T \mathbf{T} + \mathbf{D}\mathbf{T}) - \mathbf{U}(\mathbf{A}\mathbf{T} \mathbf{T}) \\ \mathbf{y}_F &= \mathbf{V}(\mathbf{A}^T \mathbf{T} + \mathbf{D}\mathbf{T}) - \mathbf{V}(\mathbf{A}\mathbf{T} \mathbf{T}) \end{aligned}$$
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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1289) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALPHAD (K4) - 3
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	S.D. XP	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP	
12	-12	5.84	-.3511	8.27	.0818	1.28	6.64	930		5.52	7.45	.0591	7.45	4.51	5.49	.0591	4.51	5.49	
24	-22	7.90	-.4719							5.53	7.08	.0451	7.08	2.96	5.13	.0451	2.96	5.13	
36	-32	9.18	-.5385							5.50	6.88	.0595	6.88	1.92	4.92	.0595	1.92	4.92	
48	-41	9.77	-.5668							5.50	6.79	.0819	6.79	1.31	4.81	.0819	1.31	4.81	
60	-49	10.13	-.5819							5.51	6.72	.1023	6.72	.98	4.78	.1023	.98	4.78	
72	-59	10.41	-.5976							5.47	6.63	.1158	6.63	.88	4.74	.1158	.88	4.74	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128581 - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE IN' - 4
 ALPHA ANGLE - 30.0

X = U/IAT T)
 Y = V/IAT T)

XP = U/IAT T + DT)
 YP = V/IAT T + DT) - U/IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	14.56	3.28	.0313	1.06	7.35	930	14.16	1.02
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP
12	-1.13	5.17	-.3257	-.06	5.80	-.2249	7.65	8.59
24	-1.25	5.39	-.4126	-.12	5.36	-.2225	7.63	8.18
36	-1.35	5.56	-.4904	-.16	5.31	-.1691	7.59	7.98
48	-1.48	5.82	-.5223	-.15	5.32	-.1220	7.58	7.90
60	-1.50	6.03	-.5426	-.22	5.11	-.0857	7.58	7.80
72	-1.49	6.02	-.5538	-.28	5.23	-.0563	7.55	7.69
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN YP	S.D. YP	P (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.09	5.80	-.4650	7.65	8.59	.0877	5.12	6.20
24	-.12	5.36	-.5772	7.63	8.18	.0804	3.33	5.77
36	-.16	5.31	-.6408	7.59	7.98	.0913	2.25	5.52
48	-.15	5.32	-.6816	7.58	7.90	.0942	1.54	5.33
60	-.22	5.11	-.8324	7.58	7.80	.1115	1.15	5.30
72	-.28	5.23	-.8977	7.55	7.69	.1237	.92	5.26

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

A = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	18.59	10.23	.1565	1.12	7.88	930	17.95	.95
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	-1.15	6.64	-.3184	-.05	6.90	-.4410	9.94	9.53
24	-.30	6.74	-.4199	-.12	8.67	-.5585	9.87	9.16
35	-.40	10.08	-.4809	-.17	9.63	-.6255	9.82	8.90
48	-.54	10.63	-.5051	-.18	10.35	-.6678	9.77	8.80
50	-.65	11.37	-.5323	-.26	10.65	-.6822	9.74	8.65
72	-.78	11.76	-.5443	-.34	10.73	-.6867	9.74	8.58
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	-1.15	6.64	-.3184	-.05	6.90	-.4410	9.94	9.53
24	-.30	6.74	-.4199	-.12	8.67	-.5585	9.87	9.16
35	-.40	10.08	-.4809	-.17	9.63	-.6255	9.82	8.90
48	-.54	10.63	-.5051	-.18	10.35	-.6678	9.77	8.80
50	-.65	11.37	-.5323	-.26	10.65	-.6822	9.74	8.65
72	-.78	11.76	-.5443	-.34	10.73	-.6867	9.74	8.58
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	-1.15	6.64	-.3184	-.05	6.90	-.4410	9.94	9.53
24	-.30	6.74	-.4199	-.12	8.67	-.5585	9.87	9.16
35	-.40	10.08	-.4809	-.17	9.63	-.6255	9.82	8.90
48	-.54	10.63	-.5051	-.18	10.35	-.6678	9.77	8.80
50	-.65	11.37	-.5323	-.26	10.65	-.6822	9.74	8.65
72	-.78	11.76	-.5443	-.34	10.73	-.6867	9.74	8.58

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112858) - CAPE WA. EDV
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 6
 ALPHA ANGLE - 90.0

$Z = U/AT$
 $Y = V/AT$

$XP = U/AT + DT$
 $YP = V/AT + DT$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	P (X,X)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,X)	MEAN YP	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
12	22.67	11.10	.1958	1.45	8.66	930	21.77	1.30						
24	2.75	5.94	.3299	-4.166	.1094	.1834	-1.899	12.04	10.40	6.50	7.66	.2145	6.50	7.66
36	-9.64	9.19	.4100	-5.416	.1828	.0865	-2.127	12.17	10.00	4.66	7.09	.2056	4.66	7.09
48	-64	10.64	.4545	-6.351	.1874	.0217	-1.948	12.19	9.75	3.28	6.57	.2017	3.28	6.57
60	-80	12.14	.4924	-6.674	.1950	-.0356	-1.568	12.10	9.61	2.29	6.39	.2025	2.29	6.39
72	-97	12.54	.5203	-6.950	.1599	-.0694	-1.405	12.02	9.46	1.55	6.28	.2119	1.55	6.28
			.5343	-6.887	.2034	-.1064	-1.342	11.99	9.38	1.22	6.26	.2019	1.22	6.26

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 7
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	26.54	12.07	.2262	1.75	9.64	930	14.24	11.40	.2443	7.15	8.73	-.1779	14.24	11.40	.2443	7.15	8.73
24							14.10	10.94	.2849	5.13	8.05	-.1847	14.10	10.94	.2849	5.13	8.05
36							14.14	10.66	.2610	3.84	7.47	-.1662	14.14	10.66	.2610	3.84	7.47
48							14.13	10.49	.2565	2.40	7.24	-.1437	14.13	10.49	.2565	2.40	7.24
60							14.21	10.35	.2433	1.84	7.10	-.1461	14.21	10.35	.2433	1.84	7.10
72							14.17	10.25	.2323	1.46	7.05	-.1475	14.17	10.25	.2323	1.46	7.05

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 8
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.23	7.80	-.2305	13.06	.2149	1.88	10.45	930	16.38	12.37	.2335	7.98	9.55
24	-.41	10.52	-.3345						16.23	11.90	.2414	5.82	8.89
36	-.57	12.19	-.4500						16.22	11.62	.2494	3.93	8.33
48	-.75	13.15	-.4797						16.21	11.45	.2522	2.74	7.94
60	-.92	14.06	-.5094						16.23	11.26	.2584	2.01	7.74
72	-1.10	14.63	-.5230						16.23	11.13	.2264	1.73	7.64

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 9
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	34.12	14.26	.1757	1.76	12.13	930	18.17	13.57	.2008	7.27	11.17	.2008	18.17	13.57	.2008	7.27	11.17
24							18.18	13.01	.2133	5.98	10.30	.2133	18.18	13.01	.2133	5.98	10.30
36							18.24	12.65	.2266	4.59	9.61	.2266	18.24	12.65	.2266	4.59	9.61
48							18.27	12.57	.2228	3.47	8.17	.2228	18.27	12.57	.2228	3.47	8.17
60							18.31	12.17	.2015	2.41	8.92	.2015	18.31	12.17	.2015	2.41	8.92
72							18.29	12.02	.2009	2.07	8.74	.2009	18.29	12.02	.2009	2.07	8.74

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) - 10
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

D ² HP	MEAN XP	S.D. XP	R (Y, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.18	9.62	-.2823	-.08	9.87	-.3583	1.75	13.59	930	36.77	1.45	20.59	14.83	.1735	5.72	12.58
24	-.33	13.02	-.1925	-.16	13.75	-.5085						20.44	14.21	.1942	5.52	11.59
36	-.52	15.14	-.1453	-.26	16.22	-.5934						20.53	13.76	.2041	4.85	10.77
48	-.74	16.56	-.0973	-.33	17.72	-.5528						20.62	13.45	.2093	3.62	10.23
60	-.96	17.52	-.0519	-.48	18.61	-.6864						20.75	13.26	.1994	2.83	9.84
72	-1.26	18.34	-.0419	-.58	18.83	-.6966						20.65	13.05	.1950	2.24	9.73

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12879) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
	41.75	15.95	.1332	1.47	15.24	930	40.36	1.13					
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	-18	9.42	-.2756	-.06	10.91	-.3604	-.0239	.0696	22.72	15.33	.1566	4.87	14.19
24	-29	13.03	-.3793	-.14	15.38	-.5039	-.0324	.1105	22.72	14.74	.1869	5.32	13.09
36	-45	15.31	-.4412	-.27	18.29	-.5923	-.0367	.0975	22.92	14.30	.2083	4.57	12.12
48	-66	16.86	-.4841	-.34	20.13	-.6638	.0308	.0526	22.97	13.95	.2143	3.43	11.38
60	-91	17.82	-.5050	-.45	21.06	-.6928	.0756	-.0020	23.10	13.77	.2034	2.46	10.96
72	-120	18.45	-.5116	-.53	21.35	-.7025	.1170	-.0452	23.14	13.65	.1894	1.68	10.83

STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 12
ALPHA ANGLE - 90.0

$$\begin{aligned} X &= U(AT) \\ Y &= V(AT) \end{aligned} \quad \begin{aligned} X^P &= U(AT) \\ Y^P &= V(AT) \end{aligned}$$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
	44.58	15.38	.1701	11.53	14.81	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.11	8.96	-.2715	-.07	9.83	-.3335	.0577	-.0181	24.28	14.80	.1869	.93	13.96
24	-.17	12.46	-.3711	-.16	14.23	-.4752	-.0494	-.0271	24.59	14.28	.2070	2.49	13.03
35	-.34	14.59	-.4333	-.22	17.10	-.5688	.0509	-.0353	24.61	13.86	.2350	2.50	12.17
48	-.47	15.91	-.4681	-.37	19.14	-.6346	.0202	-.0132	24.75	13.59	.2347	2.33	11.44
60	-.66	16.77	-.4850	-.36	20.26	-.6728	.1284	-.0424	24.98	13.45	.2353	1.96	10.95
72	-.89	17.34	-.5254	-.43	20.68	-.6858	.1463	-.0709	25.03	13.27	.2295	1.81	10.77

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 13
ALPHA ANGLE - 90.0

X	Y
U(AT	V(AT
T)	T)

$$\begin{aligned} \dot{X}P &= U(AT \dot{Y} + DT) - U(AT \dot{Y}) \\ \dot{Y}P &= V(AT \dot{Y} + DT) - V(AT \dot{Y}) \end{aligned}$$

QUADRAVARIATE NORMAL STATISTICS OF X.Y.XP.YP

CONDITIONAL BIVAR: 12 NORMAL STAT...
FOR X AND YP

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QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (120501) - CAPE KENNEDY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 14
 ALTITUDE - 50.5

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP											
DT	MEAN XP	S.D. XP	P (XP,XP)	MEAN YP	S.D. YP	P (YP,YP)	MEAN X	S.D. X	N	MEAN Y	S.D. Y
12	-05	8.20	0.225	-11	7.15	0.218	1.12	10.43	930	1.12	10.43
24	-07	10.20	0.303	-17	10.05	0.417					
36	-14	11.45	0.408	-25	12.00	0.573					
48	-27	12.72	0.558	-38	13.25	0.723					
60	-38	13.47	0.663	-49	13.80	0.843					
72	-54	13.83	0.858	-65	14.21	0.921					
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP											
DT	MEAN XP	S.D. XP	P (XP,XP)	MEAN YP	S.D. YP	P (YP,YP)	MEAN X	S.D. X	N	MEAN Y	S.D. Y
12	-05	8.20	0.225	-11	7.15	0.218	1.12	10.43	930	1.12	10.43
24	-07	10.20	0.303	-17	10.05	0.417					
36	-14	11.45	0.408	-25	12.00	0.573					
48	-27	12.72	0.558	-38	13.25	0.723					
60	-38	13.47	0.663	-49	13.80	0.843					
72	-54	13.83	0.858	-65	14.21	0.921					

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
		36.18	10.66	.1018	1.39	9.08	930								
12		7.68	3.34	-.10	-.17	6.54		19.01	9.99	.1281	5.05	8.44			
24		9.31	4.16	-.17	-.4883	8.85		19.13	9.66	.1371	4.78	7.85			
36		10.66	4.716	-.25	-.5755	10.44		19.34	9.38	.1419	4.56	7.33			
48		11.71	5.120	-.32	-.6293	11.41		19.49	9.14	.1514	3.54	6.99			
60		12.45	5.392	-.41	-.6653	12.10		19.60	8.97	.1535	3.04	6.73			
72		12.82	5.530	-.53	-.6920	12.58		19.61	8.88	.1505	2.58	6.51			

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 16
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	30.54	9.31	.0516	1.15	7.78	930	30.22	1.19
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	S.D. YP
12	-.05	6.90	-.3515	-.06	5.38	-.3467	-.0979	7.26
24	-.11	8.58	-.4360	-.13	7.31	-.4720	-.0969	6.80
36	-.20	9.76	-.4950	-.20	9.63	-.5585	-.0951	6.39
48	-.28	10.59	-.5338	-.27	9.66	-.6238	-.0990	6.02
60	-.42	11.05	-.5529	-.37	10.28	-.6620	-.0828	5.78
72	-.52	11.44	-.5720	-.51	10.61	-.6860	-.0801	5.61

BI-VARIATE AND CONDITIONAL BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 11289A - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/58 - 12/75
 ALTITUDE (FT) - 10
 ALPHA ANGLE - 30.5

$Y = U(YAT T)$
 $Y = V(YAT T)$
 $XP = U(XPAT T) - U(YAT T)$
 $YP = V(XPAT T) - V(YAT T)$

BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN Y	S.D. Y	P Y	MEAN XP	S.D. XP	P XP	MEAN YP	S.D. YP	P YP
24.31	2.45	273	1.22	8.85	930				
12	1.1	5.24	1.37	7.35	1.258	1.528	2.30	7.74	1.027
21	1.25	5.50	1.37	7.35	1.377	1.704	2.37	7.38	1.084
38	1.7	5.73	1.37	7.35	1.528	1.827	2.39	7.11	1.159
49	1.25	5.50	1.37	7.35	1.528	1.827	2.42	6.97	1.207
51	1.32	5.73	1.37	7.35	1.528	1.827	2.50	6.84	1.258
72	1.45	5.96	1.37	7.35	1.528	1.827	2.57	6.98	1.257

CONDITIONAL BI-VARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN Y	S.D. Y	P Y	MEAN XP	S.D. XP	P XP	MEAN YP	S.D. YP	P YP
24.31	2.45	273	1.22	8.85	930				
12	1.1	5.24	1.37	7.35	1.258	1.528	2.30	7.74	1.027
21	1.25	5.50	1.37	7.35	1.377	1.704	2.37	7.38	1.084
38	1.7	5.73	1.37	7.35	1.528	1.827	2.39	7.11	1.159
49	1.25	5.50	1.37	7.35	1.528	1.827	2.42	6.97	1.207
51	1.32	5.73	1.37	7.35	1.528	1.827	2.50	6.84	1.258
72	1.45	5.96	1.37	7.35	1.528	1.827	2.57	6.98	1.257

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12568) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 18
 ALPHA ANGLE - 30.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	MEAN XP	S.D. YP	P (XP, YP)
12	17.84	7.59	0.05	.82	5.84	830		
24								
36								
48								
60								
72								
DT HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN XP	S.D. YP
12	-0.01	8.31	-0.398	-0.07	4.52	-0.062	8.84	5.12
24	-0.04	8.11	-0.273	-0.14	5.53	-0.403	8.77	4.88
36	-0.13	8.72	-0.581	-0.15	5.45	-0.577	8.81	4.56
48	-0.24	9.08	-0.581	-0.25	6.36	-0.622	8.75	4.37
60	-0.32	9.53	-0.597	-0.32	7.42	-0.659	8.93	4.20
72	-0.42	9.66	-0.595	-0.37	7.73	-0.689	8.04	4.08
DT HP	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN XP	S.D. YP
12	-0.01	8.31	-0.398	-0.07	4.52	-0.062	8.84	5.12
24	-0.04	8.11	-0.273	-0.14	5.53	-0.403	8.77	4.88
36	-0.13	8.72	-0.581	-0.15	5.45	-0.577	8.81	4.56
48	-0.24	9.08	-0.581	-0.25	6.36	-0.622	8.75	4.37
60	-0.32	9.53	-0.597	-0.32	7.42	-0.659	8.93	4.20
72	-0.42	9.66	-0.595	-0.37	7.73	-0.689	8.04	4.08

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12865) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FEET) - 15
 ALPHA ANGLE - 90.0

$X = U(AT \ T)$
 $Y = V(AT \ T)$
 $XP = U(AT \ T + DT) - U(AT \ T)$
 $YP = V(AT \ T + DT) - V(AT \ T)$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (XP, X)	R (YP, Y)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	11.16	6.97	.1247	.49	4.60	930													
24																			
36																			
48																			
60																			
72																			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.02	6.94	-.4341	-.06	4.03	-.4377	.0597	.0310	-.0894	5.67	6.05	.1477	.65	4.13
24	-.04	7.60	-.5396	-.13	4.97	-.5375	.0668	.0634	-.1284	5.68	5.84	.1551	.65	3.85
36	-.06	8.24	-.5832	-.14	5.74	-.6151	.1026	.0111	-.1222	5.69	5.63	.1451	.68	3.61
48	-.12	8.39	-.5316	-.18	6.00	-.6372	.0955	.0000	-.1019	5.68	5.61	.1946	.96	3.94
60	-.22	8.92	-.6231	-.22	6.12	-.6528	.0883	-.0133	-.0822	5.67	5.45	.1668	.91	3.48
72	-.30	8.91	-.6121	-.27	6.25	-.6674	.0991	-.0417	-.0697	5.73	5.51	.1582	.27	3.43

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	S.D. X	MEAN Y	R (X, Y)	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-0.01	6.73	-0.5132	6.55	0.22	0.1189	3.97	930	3.48	5.61	0.1673	0.28	3.45
24	-0.10	7.39	-0.5646						3.45	5.39	0.1602	0.28	3.35
36	-0.16	7.89	-0.6010						3.42	5.22	0.1946	0.27	3.09
48	-0.22	8.00	-0.6051						3.42	5.20	0.1718	0.27	3.08
60	-0.30	8.44	-0.6421						3.37	5.01	0.1969	0.28	2.97
72	-0.40	8.77	-0.6377						3.32	5.04	0.1831	0.28	3.01

UNIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12823 - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/52 - 12/79
 NUMBER OF P - 2
 ALPHA VALUE - .90.0

X = VIAT T
 Y = VIAT T
 XP = VIAT T + DT
 YP = VIAT T + DT

UNIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
3 7:	3.7:	5.2:	.07.9	-.10	3.8:	830	3.10	-.11

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (XP, YP)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	-.03	6.30	-.50.0	-.01	4.12	-.02.35	2.15	5.35	.1100	.04	2.95
24	-.03	6.8:	-.55.9	-.02	4.02	.04.48	2.12	5.16	.0821	.06	2.98
36	-.12	7.30	-.59.2	-.03	4.01	.02.32	2.10	4.98	.09.6	.06	2.75
48	-.14	7.42	-.60.5	-.02	4.07	.05.20	2.08	4.93	.07.1	.02	2.82
60	-.2:	7.63	-.60.5	-.01	5.00	.01.30	2.03	4.82	.11.1	.07	2.60
72	-.20	7.45	-.62.6	-.01	4.04	.07.23	2.01	4.86	.07.5	.04	2.68

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KPH) - 22
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	S.D. X	MEAN Y	S.D. Y	R (X, Y)	N	MEAN XP	S.D. XP	R (XP, YP)	S.D. YP	MEAN YP	R (XP, YP)	S.D. YP
12	-0.09	5.60	-0.4466	6.31	-0.14	3.67	0.503	930	1.33	5.63	0.0462	2.82	-0.03	0.0478	2.82
24	-0.15	6.23	-0.4987						1.30	5.45	0.0268	3.09	-0.03	0.0273	3.09
36	-0.21	6.84	-0.5437						1.27	5.28	0.0635	2.70	-0.04	0.0632	2.70
48	-0.28	6.99	-0.5558						1.23	5.24	0.0150	2.87	-0.08	0.0615	2.87
60	-0.33	7.30	-0.5844						1.19	5.12	0.0333	2.57	-0.08	0.0903	2.57
72	-0.36	7.40	-0.5977						1.17	5.06	0.0335	2.62	-0.09	0.0647	2.62

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 1.41
 GIVEN Y
 -0.07

STATION (1958) - CAPE KENNEDY
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/56 - 12/70
ALPHA ANGLE - 23
ALPHA ANGLE - 90.0

QUADRAVAP: ATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	OIVEN X	OIVEN Y
.83	6.43	.0943	-.20	3.59	930	-.03	-.20

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR Y_P AND Y_P'

DT	MEAN	S.D.	R	MEAN	S.D.	R	R	R	MEAN	S.D.	R	MEAN	S.D.
HR	X _P	X _P	(X, X _P)	Y _P	Y _P	(Y, Y _P)	(X _P , Y _P)	(Y _P , X)	X _P	X _P	(X _P , Y _P)	Y _P	Y _P
12	-.03	5.41	-.4237	.01	4.05	-.5752	.0215	-.0348	.85	5.80	.0525	-.17	2.84
15	-.04	6.07	-.4751	.02	3.79	-.5384	.0393	.0311	.85	5.84	.0362	-.17	1.02
36	-.12	6.54	-.5199	.02	4.63	-.6524	.0531	.0126	.80	5.48	.0260	-.17	2.72
48	-.15	6.84	-.5374	.04	4.40	-.6213	.0203	.0241	.78	5.42	.0413	-.16	2.82
60	-.20	7.09	-.5538	.01	4.98	-.7048	.0093	-.0242	.75	5.33	.0464	-.17	2.95
72	-.24	7.31	-.5792	-.01	4.60	-.6560	-.0036	-.0113	.73	5.33	.0501	-.18	2.71

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KH) - 24
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.04	5.66	-.4246	.01	4.12	-.5557	-.43	3.71	930	-.0635	.87	6.16	.0843	-.26	3.08
24	-.11	6.11	-.4544	.02	4.18	-.5695				-.0803	.68	6.06	.0793	-.26	3.04
35	-.18	6.84	-.4333	-.02	4.68	-.6345				-.0925	.61	5.92	.0492	-.28	2.87
48	-.28	6.69	-.4367	-.04	4.66	-.5360				-.0691	.55	5.91	.0788	-.28	2.86
60	-.38	7.33	-.5433	-.05	5.03	-.6861				-.0702	.50	5.72	.0602	-.29	2.70
72	-.48	7.28	-.5466	-.08	4.91	-.6689				-.0583	.45	5.69	.0935	-.30	2.76

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12928) - CAPE KENNEDY
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (ft) - 25
ALPHA ANGLE - 90.0
 $X = U(AT T)$
 $Y = V(AT T)$
 $XP = U(AT T + OT) - U(AT T)$
 $YP = V(AT T + OT) - V(AT T)$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	.82	7.57	.1226				-56	3.42	930				.13	-.45		
12	-.04	6.19	-.4194	-.04	3.54	-.5213	-.5213	.0574	-.0485	.72	6.89	.1408			-.35	2.82
24	-.11	6.38	-.4248	-.02	3.63	-.5324	-.5324	.0283	-.0168	.70	6.85	.1494			-.34	2.88
36	-.17	6.98	-.4608	-.04	4.17	-.6158	-.6158	.0660	-.0403	.66	6.72	.1518			-.35	2.70
48	-.26	7.12	-.4754	-.04	4.24	-.6231	-.6231	.0931	-.0230	.62	6.66	.1597			-.35	2.88
60	-.34	7.54	-.5153	-.01	4.53	-.6596	-.6596	.0931	-.0568	.58	6.53	.1533			-.35	2.54
72	-.43	7.76	-.5224	-.07	4.52	-.6739	-.6739	.0527	-.0454	.52	6.46	.1758			-.36	2.53

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (101) - 26
 ALPHA ANGLE - 90.0

$$X = U(1AT \ T)$$

$$Y = V(1AT \ T)$$

$$XP = U(1AT \ T + DT) - U(1AT \ T)$$

$$YP = V(1AT \ T + DT) - V(1AT \ T)$$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-05	5.48	-.3251	-.03	3.30	-.4340	-.61	3.35	930	1.07	7.84	.1410	-.35	2.91
24	-.10	6.17	-.3703	-.01	3.67	-.5493				1.06	7.73	.1461	-.34	2.81
36	-.17	6.92	-.4113	-.01	4.13	-.6126				1.03	7.59	.1429	-.34	2.65
48	-.24	7.01	-.4252	.00	4.26	-.6223				.99	7.53	.1457	-.33	2.60
60	-.28	7.48	-.4556	-.02	4.51	-.6660				.95	7.39	.1411	-.34	2.50
72	-.32	7.94	-.4862	-.03	4.60	-.6778				.92	7.26	.1504	-.35	2.46

STATION (12608) - CAPE KENNEDY
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 27
ALPHA ANGLE - 90.0

X	-	U(AT Y)		Xp	-	U(AT T)	
Y	-	V(AT Y)		Yp	-	V(AT T)	

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

[illegible]

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR X^2 AND Y^2

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12868) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KFT.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
3	1/56 - 12/70	0	90.0	.07	3.20	-.2107	.00	3.57	930
3	1/56 - 12/70	1	90.0	3.18	7.05	.0098	1.04	6.24	930
3	1/56 - 12/70	2	90.0	7.28	7.30	.0412	1.31	6.13	930
3	1/56 - 12/70	3	90.0	10.87	8.27	.0818	1.28	6.64	930
3	1/56 - 12/70	4	90.0	14.56	9.28	.0903	1.08	7.35	930
3	1/56 - 12/70	5	90.0	18.59	10.23	.1566	1.12	7.88	930
3	1/56 - 12/70	6	90.0	22.67	11.10	.1958	1.45	8.68	930
3	1/56 - 12/70	7	90.0	26.54	12.07	.2282	1.75	8.64	920
3	1/56 - 12/70	8	90.0	30.26	13.06	.2149	1.88	10.45	930
3	1/56 - 12/70	9	90.0	34.12	14.26	.1757	1.76	12.13	930
3	1/56 - 12/70	10	90.0	38.06	15.53	.1485	1.75	13.59	930
3	1/56 - 12/70	11	90.0	41.75	15.95	.1332	1.47	15.24	930
3	1/56 - 12/70	12	90.0	44.58	15.38	.1701	1.53	14.81	930
3	1/56 - 12/70	13	90.0	44.61	13.79	.1882	1.66	13.19	930
3	1/56 - 12/70	14	90.0	41.24	12.35	.1337	1.42	10.43	930
3	1/56 - 12/70	15	90.0	36.18	10.66	.1018	1.39	9.08	930
3	1/56 - 12/70	16	90.0	30.54	9.31	.0516	1.15	7.78	930
3	1/56 - 12/70	17	90.0	27.31	8.46	.0734	1.22	6.65	930
3	1/56 - 12/70	18	90.0	17.64	7.69	.0998	.82	5.64	930
3	1/56 - 12/70	19	90.0	11.16	6.57	.1247	.49	4.60	930
3	1/56 - 12/70	20	90.0	6.66	6.55	.1189	.22	3.97	930
3	1/56 - 12/70	21	90.0	3.71	6.21	.0719	-.10	3.61	930
3	1/56 - 12/70	22	90.0	2.07	6.31	.0533	-.14	3.67	930
3	1/56 - 12/70	23	90.0	.83	6.43	.0443	-.28	3.58	930
3	1/56 - 12/70	24	90.0	.53	6.81	.0817	-.43	3.71	930
3	1/56 - 12/70	25	90.0	.82	7.57	.1226	-.56	3.42	930
3	1/56 - 12/70	26	90.0	1.62	8.32	.1246	-.81	3.35	930
3	1/56 - 12/70	27	90.0	2.04	9.42	.1066	-.62	3.65	930

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (10M) - 0
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT) - U(1AT T)
 YP = V(1AT T + DT) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X
 -1.08

S.D. X
 3.18

R (X, Y)
 -.1572

MEAN Y
 .47

S.D. Y
 3.14

N
 900

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N
12	-.02	3.51	-.5560	.02	3.25	-.5241	.47	3.14	900
24	-.03	3.47	-.5536	.02	3.79	-.6153			
36	-.06	4.33	-.6368	.04	4.38	-.7067			
48	-.05	3.92	-.5359	.05	4.50	-.7286			
60	-.08	4.37	-.7082	.05	4.62	-.7471			
72	-.07	3.95	-.6418	.05	4.52	-.7338			

GIVEN X
 -1.07

S.D. XP
 2.53

R (XP, Y)
 .3274

MEAN YP
 -.61

S.D. YP
 2.58

R (YP, X)
 -.1092

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN Y
 .46

S.D. XP
 2.53

R (XP, YP)
 -.1282

MEAN YP
 -.59

S.D. YP
 2.18

R (YP, X)
 -.0174

R (XP, YP)
 -.1975

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	.96	6.56	-.0311	1.20	5.26	900											
12	-.02	4.99	-.3899	-.4507	.0565	.3550	-.04	5.64	-.0704	.93	4.24		-.04	5.64	-.0704	.93	4.24
24	-.05	6.83	-.5375	-.5872	.0561	.3073	.08	5.14	-.0974	.81	3.86		.08	5.14	-.0974	.81	3.86
36	-.07	8.07	-.6369	-.6892	.0429	.1817	.25	4.89	-.1057	.71	3.64		.25	4.89	-.1057	.71	3.64
48	-.10	8.34	-.6632	-.7225	.0106	.1055	.33	4.86	-.0791	.65	3.59		.33	4.86	-.0791	.65	3.59
60	-.13	8.40	-.6703	-.7271	-.0022	.0729	.36	4.85	-.0581	.63	3.59		.36	4.85	-.0581	.63	3.59
72	-.09	8.27	-.6591	-.7298	-.0004	.0467	.40	4.93	-.0589	.61	3.59		.40	4.93	-.0589	.61	3.59

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 50.0

$X = U(\text{AT } T)$
 $Y = V(\text{AT } T)$
 $XP = U(\text{AT } T + DT) - U(\text{AT } T)$
 $YP = V(\text{AT } T + DT) - V(\text{AT } T)$

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
	3.65	7.14	.0651	.16	5.17	900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT MR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.03	5.03	-.3684	-.04	4.48	-.4313	.0865	-.3109	1.84	5.33	.0613	1.24	4.34
24	-.08	6.60	-.4824	-.06	5.81	-.5675	.1206	-.3195	1.84	5.96	.0394	.83	3.95
36	-.09	7.83	-.5747	-.07	6.78	-.6645	.1054	-.2476	1.80	5.69	.0314	.52	3.71
48	-.15	8.27	-.6101	-.08	7.15	-.7022	.0995	-.1838	1.75	5.59	.0300	.32	3.62
60	-.17	8.94	-.6340	-.08	7.27	-.7152	.0724	-.1166	1.72	5.50	.0375	.20	3.59
72	-.17	8.58	-.6384	-.06	7.32	-.7220	.0902	-.1034	1.73	5.50	.0413	.14	3.57

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 30.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
12	-0.05	4.94	-0.3170	8.04	0.0509	-0.82	5.97	900	3.49	7.36	0.0417	1.95	5.07	0.0417	1.95	5.07
24	-0.13	6.86	-0.4419						3.27	6.95	0.0319	1.09	4.67	0.0319	1.09	4.67
36	-0.18	8.13	-0.5273						3.06	6.68	0.0356	0.43	4.47	0.0356	0.43	4.47
48	-0.26	8.78	-0.5738						2.93	6.51	0.0280	0.06	4.40	0.0280	0.06	4.40
60	-0.32	9.07	-0.5975						2.83	6.41	0.0335	-0.10	4.30	0.0335	-0.10	4.30
72	-0.34	9.20	-0.6055						2.80	6.38	0.0239	-0.20	4.23	0.0239	-0.20	4.23

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	8.60	8.74	.0932	-1.40	6.56	900											
24																	
36																	
48																	
60																	
72																	

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(1/T)
 Y = V(1/T)
 XP = U(1/T + DT)
 YP = V(1/T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y					
	11.13	9.69	.1393	-1.70	6.83	900	11.03	-1.33					
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.10	5.52	-.2897	-.05	5.50	-.4065	.1648	.2004	6.54	9.09	.1361	2.80	5.96
24	-.25	7.30	-.3874	-.08	7.01	-.5205	.2114	.1239	6.23	8.77	.1176	1.58	5.60
36	-.39	8.63	-.4594	-.12	8.07	-.5939	.2381	.0476	5.95	8.48	.0979	.77	5.33
48	-.50	9.37	-.5013	-.15	8.64	-.6411	.2304	-.0169	5.62	8.32	.0894	.03	5.16
60	-.57	9.89	-.5297	-.07	8.95	-.6672	.2419	-.0763	5.45	8.19	.0739	-.32	5.05
72	-.58	10.16	-.5475	-.02	9.08	-.6760	.2209	-.0914	5.31	8.09	.0790	-.55	5.02

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (MM) - 6
ALPHA ANGLE - 90.0

X	Y
-	-
U(AT	V(AT
T)	T)

$$\begin{aligned} \dot{X}P &= U(AT \cdot + DT) - U(AT \cdot T) \\ \dot{Y}P &= V(AT \cdot T + DT) - V(AT \cdot T) \end{aligned}$$

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT HR	MEAN		S.D.		R (X,Y)	MEAN		S.D. Y	N	GIVEN		R (XP,YP)	MEAN		S.D. XP	R (XP,YP)	MEAN		S.D. YP
	X	Y	X	Y		X	Y			XP	YP								
	13.90		10.63		.1611	-1.93		7.29	900	13.75		-1.66							
12	-.09		5.78		-.2736	-.3888		5.63		-.1911			7.94		10.09		.1697	2.94	6.51
24	-.23		7.71		-.3709	-.4975		7.27		-.2451			7.87		9.72		.1441	1.97	6.12
36	-.41		9.02		-.4361	-.6222		8.57		-.2509			7.54		9.46		.1197	1.08	5.77
48	-.55		9.70		-.4747	-.6314		9.12		-.2268			7.06		9.30		.1098	.24	5.58
60	-.64		10.45		-.5102	-.6479		9.38		-.2076			6.86		9.11		.0983	-.31	5.53
72	-.68		10.93		-.5359	-.6457		9.33		-.1970			6.71		8.95		.0922	-.62	5.56

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112828) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 7
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN Y	S.D. Y	R (YP, YP)	MEAN XP	S.D. XP	R (XP, XP)	MEAN YP	S.D. YP
12	16.79	11.63	.1917	-2.27	8.02	900														
24																				
36																				
48																				
60																				
72																				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 8
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	19.71	12.80	.1907	-2.69	8.76	900														
24																				
36																				
48																				
60																				
72																				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-11	6.84	-.2681	-.02	6.71	-.3825	-3.825	.1114	-.1482	10.88	12.24	.2048	3.01	7.95
24	-35	9.24	-.3641	-.08	8.48	-.4879	-4.879	.1864	-.1889	10.75	11.82	.1940	1.78	7.51
36	-56	10.85	-.4309	-.10	9.83	-.5663	-5.663	.2439	-.2095	10.46	11.47	.1712	.86	7.13
48	-75	11.84	-.4754	-.13	10.56	-.6145	-6.145	.2641	-.2042	9.99	11.21	.1519	-.03	6.87
60	-85	12.63	-.5121	-.10	10.80	-.6299	-6.299	.2810	-.1930	9.57	10.97	.1359	-.77	6.79
72	-91	13.26	-.5414	-.05	10.93	-.6381	-6.381	.2958	-.1329	9.31	10.75	.1217	-1.10	6.74

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12828) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/73
 ALTITUDE (FT) - 9
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	22.94	14.47	.7128	-3.08	10.00	900										
24																
36																
48																
60																
72																

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	P	MEAN XP	S.D. XP	MEAN YP	S.D. YP
22.32	-2.83					

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (XP, Y)	R (XP, X)	R (YP, X)	R (YP, Y)	P (Y, YP)	R (XP, YP)	R (XP, Y)	R (XP, X)	P (XP, YP)	MEAN YP	S.D. YP
12	-1.14	7.61	-.2553	-.22	7.60	.1096	-.1133	-.1361	-.1133	-.3798	.1096	.1133	-.1361	.22	12.23	13.11
24	-.40	10.48	-.3534	-.07	9.96	.1721	.0573	-.1744	.0573	-.5016	.1721	.0573	-.1744	.22	12.02	8.51
36	-.63	12.23	-.4334	-.12	11.41	.2322	-.0213	-.2555	-.0213	-.5751	.2322	-.0213	-.2555	.2322	11.81	8.07
48	-.85	13.50	-.4822	-.14	12.19	.2613	-.0732	-.3773	-.0732	-.6186	.2613	-.0732	-.3773	.1836	11.31	7.81
60	-.97	14.31	-.5146	-.03	12.34	.2825	-.1238	-.4961	-.1238	-.6256	.2825	-.1238	-.4961	.1722	10.86	7.73
72	-1.08	14.97	-.5419	-.05	12.57	.3022	-.1686	-.5796	-.1686	-.6375	.3022	-.1686	-.5796	.1548	10.47	7.70

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 10
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	R (XP, Y)	R (XP, XP)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-1.15	8.09	-.1677	-.07	8.46	.2638	-3.69	11.49	900	-.1260	.0611	.1577	13.53	15.07	25.32	-3.37	2.47	10.60
24	-.44	11.11	-.3524	-.11	11.03					-.1767	.0050	.2354	13.54	14.54			1.42	9.95
36	-.70	13.12	-.4293	-.14	12.72					-.1962	-.0712	.2895	13.21	14.13			.31	9.44
48	-.88	14.41	-.4747	-.23	13.61					-.2003	-.1476	.3289	12.66	13.80			-.60	9.11
60	-1.04	15.28	-.5078	-.23	14.13					-.1985	-.2138	.3599	12.05	13.52			-1.77	8.93
72	-1.15	16.09	-.5386	-.20	14.32					-.1948	-.2528	.3700	11.58	13.23			-2.43	8.84

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

[illegible]

DATE	DESCRIPTION	AMOUNT
1908
1909
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THE UNIVERSITY OF CHICAGO

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1. *Chlorophyll a* and *Chlorophyll b* contents were determined by spectrophotometry using the method of Lichtenthaler and Whistler (1987). The absorbance of the chlorophyll extracts was measured at 663 nm and 646 nm. The concentrations of chlorophyll *a* and chlorophyll *b* were calculated using the following equations:

1. *Chlorophyll a* (Chl *a*)

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0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

1. **Introduction**

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Figure 1

STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (M) - 13
ALPHA ANGLE - 90.0

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/53 - 12/70
 ALTITUDE (KH) - 14
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
HR																
12	-1.12	14.18	-0.5224	-1.40	14.26	.3158	-4.34	11.44	900	31.89	-4.30	16.34	13.87	.3299	.05	10.88
24	-1.02	13.46	-0.4889	-1.39	13.80							16.38	13.53	.3290	-1.20	10.37
36	-0.89	12.46	-0.4482	-1.39	12.95							15.63	13.16	.3219	-1.25	9.85
48	-0.77	11.20	-0.4028	-1.29	11.76							15.43	12.85	.3050	-1.84	9.44
60	-0.51	9.52	-0.3373	-1.21	9.81							14.84	12.55	.2987	-2.82	9.14
72	-0.22	7.29	-0.2603	-0.09	7.26							14.23	12.26	.2794	-3.63	8.92

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X. Y. XP. YP

STATION (12858)	-	CAPE KENNEDY	X = U1AT T)
MONTH OF RECORD	-	APRIL	Y = V1AT T)
PERIOD OF RECORD	-	1/56 - 12/70	XP = U1AT T + DT) - U1AT T)
ALTITUDE (KM)	-	15	YP = V1AT T + DT) - V1AT T)
ALPHA ANGLE	-	90.0	

$$\begin{array}{l} X = U(AT) \\ Y = V(AT) \end{array} \quad \begin{array}{l} X^P = U(AT) \\ Y^P = V(AT) \end{array}$$

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 16
ALPHA ANGLE - 90.0

X = UIAT T)
Y = VIAT T)
XP = UIAT T + DT) - UIAT T)
YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	R (X, Y)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, X)	MEAN Y	S.D. Y	R (XP, Y)	MEAN XP	S.D. XP
12	-16	5.83	-.3078	-3.06	7.96	.2568	-3.06	7.96	.2568	-3.06	7.96	22.98	22.98	-.0918	-3.06	7.96	.2568	22.98	22.98
24	-35	6.92	-.3687	-3.06	7.96	.2568	-3.06	7.96	.2568	-3.06	7.96	22.98	22.98	-.1227	-3.06	7.96	.2568	22.98	22.98
36	-55	8.15	-.4348	-3.06	7.96	.2568	-3.06	7.96	.2568	-3.06	7.96	22.98	22.98	-.1386	-3.06	7.96	.2568	22.98	22.98
48	-71	8.99	-.4773	-3.06	7.96	.2568	-3.06	7.96	.2568	-3.06	7.96	22.98	22.98	-.1274	-3.06	7.96	.2568	22.98	22.98
60	-79	9.79	-.5150	-3.06	7.96	.2568	-3.06	7.96	.2568	-3.06	7.96	22.98	22.98	-.1240	-3.06	7.96	.2568	22.98	22.98
72	-88	10.28	-.5508	-3.06	7.96	.2568	-3.06	7.96	.2568	-3.06	7.96	22.98	22.98	-.1328	-3.06	7.96	.2568	22.98	22.98

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

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1968 - CAPE KENNEDY

STATION, 12851, APRIL 1958, NO 11A15

MONTH OF RECORD - 1/56 - 12/70

PERIOD OF RECORD	PERIOD OF RECORD
1917-1918	1917-1918
1918-1919	1918-1919
1919-1920	1919-1920
1920-1921	1920-1921
1921-1922	1921-1922
1922-1923	1922-1923
1923-1924	1923-1924
1924-1925	1924-1925
1925-1926	1925-1926
1926-1927	1926-1927
1927-1928	1927-1928
1928-1929	1928-1929
1929-1930	1929-1930
1930-1931	1930-1931
1931-1932	1931-1932
1932-1933	1932-1933
1933-1934	1933-1934
1934-1935	1934-1935
1935-1936	1935-1936
1936-1937	1936-1937
1937-1938	1937-1938
1938-1939	1938-1939
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1941-1942	1941-1942
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2016-2017	2016-2017
2017-2018	2017-2018
2018-2019	2018-2019
2019-2020	2019-2020
2020-2021	2020-2021
2021-2022	2021-2022
2022-2023	2022-2023
2023-2024	2023-2024
2024-2025	2024-2025
2025-2026	2025-2026
2026-2027	

ALTITUDE (FEET) - 90.0

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

[illegible]

UNIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 18222 - CAPE KENEDY
 MONTH OF RECORD - APR -
 PERIOD OF RECORD - 1956 - 12/70
 NUMBER OF OBS. - 5
 ANGLE - 0

UNIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	MEAN Y	S.D. Y	MEAN XP	S.D. XP	MEAN YP	S.D. YP
1	10.5	7.82	-2.22	5.23	11.2	11.2	-1.22	11.22
2								
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CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	MEAN YP	S.D. YP	MEAN XP	S.D. XP	MEAN YP	S.D. YP
1	11.2	11.2	-1.22	11.22	11.2	11.2	-1.22	11.22
2								
3								
4								
5								
6								
7								
8								
9								
10								

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 19
ALPHA ANGLE - 90.0

X	=	U(AT	T)
Y	=	V(AT	T)

$$\begin{aligned} X^P &= U(AT \cdot DT) - U(AT \cdot T) \\ Y^P &= V(AT \cdot DT) - V(AT \cdot T) \end{aligned}$$

QUASIVARIATE NORMAL STATISTICS OF X,Y,XP,YP						CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
5.31	7.02	.2316	-1.38	4.22	900	5.39	-1.26				
MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP				MEAN XP			
-12	5.65	.4150	-01	3.90				2.68	6.37	.3331	3.72
-22	6.05	.4520	-01	4.36				2.58	6.24	.3482	3.57
-34	6.45	.4905	-05	4.97				2.40	6.10	.3986	3.32
-44	6.72	.5176	-06	5.15				2.29	5.99	.4208	3.23
-49	7.13	.5537	-07	5.55				2.21	5.84	.4403	3.06
-51	7.19	.5573	-08	5.58				2.12	5.78	.4141	3.06

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 23
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - UIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
1.67	6.07	.2286	-1.05	3.87	900

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	P (XP, YP)	R (XP, Y)	R (YP, X)
12	-0.08	4.78	-.4027	-.01	4.07	-.5279	.0021	.0945	-.0714
24	-.18	5.23	-.4420	-.04	4.21	-.5506	-.0020	.1012	-.0767
36	-.21	5.77	-.4919	-.05	4.64	-.6365	-.0415	.0397	-.0713
48	-.26	5.89	-.5074	-.06	4.87	-.6419	.0716	.0239	-.0922
60	-.30	6.14	-.5323	-.06	5.09	-.6732	.0721	.0198	-.1013
72	-.34	6.28	-.5537	-.07	5.06	-.6721	.1176	-.0128	-.1281

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
.80	5.94	.2978	-.47	3.27
.76	5.43	.3114	-.48	3.21
.69	5.28	.3227	-.55	2.98
.66	5.22	.3115	-.54	2.96
.64	5.13	.3150	-.55	2.85
.60	5.04	.2918	-.55	2.86

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 21
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT) - U(1AT T)
 YP = V(1AT T + DT) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (X, XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	-0.04	4.47	-0.4266	-1.05	3.25	900	-0.30	4.74	-0.2128	-0.58	2.57	-0.30	4.74	-0.2128	-0.58	2.57
24	-0.11	4.67	-0.4479	-1.05	3.25	900	-0.35	4.68	-0.1982	-0.59	2.69	-0.35	4.68	-0.1982	-0.57	2.69
36	-0.16	5.01	-0.4861	-1.05	3.25	900	-0.38	4.58	-0.2243	-0.58	2.40	-0.38	4.58	-0.2243	-0.58	2.40
48	-0.20	5.41	-0.5310	-1.05	3.25	900	-0.36	4.44	-0.2113	-0.59	2.49	-0.36	4.44	-0.2113	-0.59	2.49
60	-0.22	5.85	-0.5725	-1.05	3.25	900	-0.39	4.29	-0.2336	-0.58	2.28	-0.39	4.29	-0.2336	-0.58	2.28
72	-0.24	5.95	-0.5815	-1.05	3.25	900	-0.38	4.22	-0.1970	-0.57	2.30	-0.38	4.22	-0.1970	-0.57	2.30

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP, YP)	MEAN YP	S.D. YP
12	-2.01	4.89	.0979	-.80	3.03	900						-2.08	-.75			
12	.00	3.99		-.00			3.69	3.69	-.0211	-.0426	4.46	.1445	-.35			2.41
24	-.04	4.23		.03			3.35	3.35	-.0279	-.0151	4.40	.1242	-.42			2.53
36	-.06	4.68		.02			3.99	3.99	-.0288	-.0140	4.27	.1362	-.41			2.27
48	-.09	5.03		.04			3.81	3.81	-.0082	-.0018	4.15	.1549	-.41			2.33
60	-.13	5.35		.04			4.34	4.34	-.0593	-.0337	4.05	.1262	-.40			2.10
72	-.17	5.61		.05			4.18	4.18	-.0405	-.0181	3.94	.1357	-.38			2.18

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KPH) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	•	•	•	•	•	•	•	•	•	•	•
	-2.73	4.92	.0222	-.72	2.94	900											

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-2.87	5.27	.0941	-.75	2.97	900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-.06	4.76	-.3836	-.00	3.42	-.5860	-.0280	-.0475	.0584	-1.53	4.86	-2.87	-.78	-.22	2.40
24	-.10	4.94	-.4284	.01	3.36	-.5770	.0089	-.0241	.0115	-1.47	4.76			-.31	2.43
36	-.12	5.03	-.4803	.05	3.90	-.6723	-.0062	-.0500	.0436	-1.51	4.61			-.23	2.20
48	-.14	5.23	-.5150	.09	3.93	-.6836	.0173	-.0653	.0251	-1.49	4.51			-.21	2.17
60	-.14	5.81	-.5766	.10	4.16	-.7210	.0544	-.1113	.0207	-1.49	4.29			-.20	2.05
72	-.16	6.11	-.6055	.15	4.24	-.7306	.0889	-.0764	-.0488	-1.46	4.19			-.25	2.03

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STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 25
ALPHA ANGLE - 90.0

X - U(AT Y)

Y
Y
•
•
VIAT
VIAT
T)

$$XP = U(AT \gamma + DT) - U(AT \gamma)$$
$$Y_P = V(AT \cdot T + DT) - V(AT \cdot T)$$

QUADRATURE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128581) - CAPE KENNEDY
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFT) - 26
 ALPHA ANGLE - 90.6

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	-2.18	0.71	.1775	-0.73	2.97	900	-1.13	6.34	.0451	-1.13	2.42
24							-1.08	6.23	.1204	-1.08	2.40
36							-1.09	6.02	.1108	-1.09	2.18
48							-1.10	5.93	.1630	-1.10	2.17
60							-1.13	5.70	.1871	-1.13	1.99
72							-1.13	5.59	.1930	-1.13	2.05

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
-2.20	-0.74	-1.13	6.34	.2263	-1.30	2.42
		-1.08	6.23	.1793	-1.32	2.40
		-1.09	6.02	.2038	-1.31	2.18
		-1.10	5.93	.1728	-1.29	2.17
		-1.13	5.70	.1658	-1.28	1.99
		-1.13	5.59	.1386	-1.28	2.05

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 PERIOD OF RECORD - APRIL
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 27
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T) - DT
 YP = V(1AT T) - DT

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-1.35	7.23	.0995	-0.77	3.15	900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR PLANES

	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	P (YP, X)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT	-0.08	4.25	-0.2999	-0.00	3.51	-0.5600	-0.1257	0.701	0.356	-0.78	6.90	0.1910	-0.38	2.51
12	-0.12	4.72	-0.3368	-0.01	3.60	-0.5830	-0.0156	0.620	0.3219	-0.77	6.80	0.1184	-0.38	2.56
24	-0.19	5.59	-0.4577	0.01	4.13	-0.6701	-0.0232	0.266	0.1136	-0.80	6.60	0.1451	-0.37	2.34
36	-0.23	6.97	-0.4397	0.02	4.22	-0.6456	0.0757	-0.31	-0.0477	-0.82	6.49	0.1095	-0.37	2.34
48	-0.29	6.74	-0.4263	0.07	4.47	-0.7311	0.0368	-0.222	-0.0290	-0.86	6.27	0.1374	-0.33	2.15
60	-0.32	7.10	-0.5252	0.08	4.38	-0.7194	0.1163	-0.750	-0.5594	-0.88	6.15	0.0940	-0.33	2.02
72														

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12868) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
1	1/56 - 12/70	0	90.0	-1.08	3.18	-.1579	.47	3.14	900
1	1/56 - 12/70	1	90.0	.96	6.56	-.0311	1.20	5.26	900
1	1/56 - 12/70	2	90.0	3.65	7.14	.0651	.16	5.17	900
1	1/56 - 12/70	3	90.0	6.04	8.04	.0509	-.82	5.97	900
1	1/56 - 12/70	4	90.0	8.60	8.74	.0332	-1.40	6.56	900
1	1/56 - 12/70	5	90.0	11.13	9.69	.1393	-1.70	6.83	900
1	1/56 - 12/70	6	90.0	13.90	10.63	.1611	-1.93	7.29	900
1	1/56 - 12/70	7	90.0	16.79	11.65	.1917	-2.27	8.02	900
1	1/56 - 12/70	8	90.0	19.71	12.80	.1907	-2.69	8.76	900
1	1/56 - 12/70	9	90.0	22.54	14.47	.2126	-3.06	10.00	900
1	1/56 - 12/70	10	90.0	25.57	15.70	.2538	-3.69	11.49	900
1	1/56 - 12/70	11	90.0	28.60	16.91	.2498	-4.35	12.91	900
1	1/56 - 12/70	12	90.0	31.91	17.34	.2684	-4.73	13.94	900
1	1/56 - 12/70	13	90.0	33.91	16.46	.3013	-4.76	13.14	900
1	1/56 - 12/70	14	90.0	32.07	14.38	.3158	-4.34	11.44	900
1	1/56 - 12/70	15	90.0	28.08	12.04	.2965	-3.47	9.14	900
1	1/56 - 12/70	16	90.0	23.03	10.26	.2568	-3.06	7.96	900
1	1/56 - 12/70	17	90.0	17.30	9.19	.2746	-2.45	6.71	900
1	1/56 - 12/70	18	90.0	10.91	7.85	.2764	-2.03	5.23	900
1	1/56 - 12/70	19	90.0	5.31	7.02	.2816	-1.38	4.22	900
1	1/56 - 12/70	20	90.0	1.67	6.07	.2286	-1.05	3.87	900
1	1/56 - 12/70	21	90.0	-.59	5.24	.1737	-1.06	3.25	900
1	1/56 - 12/70	22	90.0	-2.01	4.89	.0979	-.80	3.03	900
1	1/56 - 12/70	23	90.0	-2.73	4.92	.0222	-.72	2.94	900
1	1/56 - 12/70	24	90.0	-2.87	5.27	.0941	-.75	2.97	900
1	1/56 - 12/70	25	90.0	-2.61	5.85	.1695	-.78	3.00	900
1	1/56 - 12/70	26	90.0	-2.18	6.71	.1775	-.73	2.87	900
1	1/56 - 12/70	27	90.0	-1.36	7.23	.0995	-.77	3.15	900

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	R (X, Y)	MEAN YP	S.D. YP	R (XP, YP)	R (XP, Y)	R (YP, X)
12	-06	3.75	-.3582	-.4287	.0857	.1641	-.1897	-.86	4.86	.1420		
24	-.09	4.75	-.4517	-.4939	.0727	.1756	-.2163	-.87	4.61	.1535		
36	-.16	6.00	-.5651	-.5892	.1072	.1002	-.2075	-.84	4.29	.1473		
48	-.18	6.57	-.6242	-.6146	.0928	.0484	-.1531	-.79	4.10	.1615		
60	-.21	7.09	-.6760	-.6462	.1400	-.0224	-.1592	-.78	3.88	.1249		
72	-.21	7.20	-.6891	-.6547	.1475	-.0574	-.1360	-.75	3.82	.1187		

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-.97	5.28	.1271	.94	4.25	930	-.71	.90					

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, YP, YP

STATION (120581) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/76
 ALTITUDE (FT) - 2
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (YP, X)
12	-06	3.85	-0.3331	.00	3.67	-0.4142	-0.17	4.43	930	-0.17	4.43	.0956	.20	5.10	-0.1561
24	-09	4.74	-0.4203	.01	4.28	-0.4841						.1556	.13	5.03	-0.2032
36	-15	5.97	-0.5236	-.00	5.10	-0.5778						.1789	.14	4.77	-0.2531
48	-18	6.44	-0.5794	.01	5.33	-0.6102						.2075	.12	4.60	-0.2776
60	-19	7.04	-0.6303	.01	5.70	-0.6511						.2350	.09	4.37	-0.2155
72	-22	7.29	-0.6635	.04	5.92	-0.6662						.2719	.07	4.24	-0.2234

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (YP, X)
12	.20	5.10	.3084	.10	4.03	.3084
24	.13	5.03	.3084	.09	3.86	.3084
36	.14	4.77	.3143	.06	3.62	.3143
48	.12	4.60	.3122	.05	3.53	.3122
60	.09	4.37	.3019	.03	3.39	.3019
72	.07	4.24	.2737	.04	3.34	.2737

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)
12	1.05	6.00	.2818	-.31	4.77	930									
24															
36															
48															
60															
72															

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112863) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMH) - 4
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N																		
	2.91	6.50	.2669	-.40	5.27	930																		
									</															

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 2.76
 -52

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (129581) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 5
 ALPHA ANGLE - 90.0

$X = U(AT \ T)$
 $Y = V(AT \ T)$
 $XP = U(AT \ T + DT) - U(AT \ T)$
 $YP = V(AT \ T + DT) - V(AT \ T)$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP						
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y							
	4.42	6.86	.2637	-.54	5.70	930		4.21	-.88							
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)							
12	-.06	4.12	-.3154	.05	4.10	-.3719	.1251	.0842	-.1548							
24	-.13	5.35	-.4066	.09	5.18	-.4705	.2154	.0407	-.2214							
36	-.17	6.44	-.4859	.10	6.15	-.5613	.2655	-.0106	-.2524							
48	-.22	7.27	-.5470	.13	6.65	-.6080	.2813	.0661	-.2504							
60	-.32	7.88	-.6034	.11	7.06	-.6451	.2910	-.1012	-.2536							
72	-.45	8.34	-.6447	.11	7.36	-.6718	.3145	-.1338	-.2726							

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1128681) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 6
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 6.06
 S.D. X 7.47
 R (X, Y) .2526
 MEAN Y -.84
 S.D. Y 6.52
 N 930

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.10	4.56	-.3253	.08	4.44	-.3531	.1115	.0561	-.1233	3.21	7.03	.2784	.63	6.07
24	-.18	5.79	-.4096	.12	5.65	-.4523	.2485	-.0022	-.1999	3.29	6.77	.2587	.65	5.77
36	-.26	6.88	-.4871	.13	6.73	-.5419	.3080	-.0689	-.2253	3.18	6.49	.2465	.49	5.44
48	-.33	7.85	-.5395	.17	7.43	-.5968	.3431	-.1146	-.2526	3.13	6.26	.2261	.43	5.19
60	-.43	8.33	-.568	.17	7.99	-.6409	.3497	-.1447	-.2532	2.96	5.98	.2217	.33	4.97
72	-.55	8.84	-.6194	.17	8.36	-.6681	.3833	-.1815	-.2681	2.85	5.73	.1928	.30	4.82

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X 5.67
 GIVEN Y -.82

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY X = U(AT T)
 MONTH OF RECORD - MAY Y = V(AT T)
 PERIOD OF RECORD - 1/56 - 12/70 XP = U(AT T + DT) - U(AT T)
 ALTITUDE (KM) - 7 YP = V(AT T + DT) - V(AT T)
 ALPHA ANGLE - 90.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	7.76	8.17	.2787	-.60	7.29	930						
DT												
12	-.11	4.69	.07	-.3534	5.09			3.97	7.71	.2990	.72	6.80
24	-.23	6.32	.11	-.4586	6.56			3.93	7.41	.2978	.59	6.46
36	-.28	7.48	.13	-.5430	7.73			3.87	7.11	.2833	.41	6.11
48	-.37	8.26	.19	-.5949	8.46			3.81	6.86	.2702	.39	5.84
60	-.51	8.94	.21	-.6396	9.11			3.65	6.59	.2594	.32	5.59
72	-.64	9.47	.21	-.6534	9.41			3.54	6.33	.2313	.32	5.47

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12668) - CAPE KENNEDY
MONTH OF RECORD - MAY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (NM) - 8
ALPHA ANGLE - 90.0

X = UIAT T)
Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT MR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	9.43	9.09	.2551	-44	8.27	930	8.62	-.62
	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	-.12	5.38	-.3170	.06	5.83	-.3586	4.81	8.60
24	-.23	6.89	-.4026	.12	7.38	-.4563	4.84	8.30
36	-.28	8.20	-.4743	.15	8.54	-.5314	4.83	7.99
48	-.36	9.11	-.5245	.19	9.34	-.5828	4.81	7.73
60	-.50	10.00	-.5819	.22	9.98	-.6195	4.62	7.39
72	-.65	10.56	-.6203	.21	10.37	-.6403	4.48	7.12
	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, Y)	MEAN XP	S.D. XP
	1.00	1.00	-.0922	4.81	8.60	-.0922	4.81	8.60
	.96	.96	-.1391	4.84	8.30	-.1391	4.84	8.30
	.71	.71	-.1686	4.83	7.99	-.1686	4.83	7.99
	.64	.64	-.2023	4.81	7.73	-.2023	4.81	7.73
	.48	.48	-.2109	4.62	7.39	-.2109	4.62	7.39
	.42	.42	-.2385	4.48	7.12	-.2385	4.48	7.12

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 9
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	24	11.18	10.03	.2348	-.51	9.67	930	-.3425	6.95	.0383	-.1048	9.05
24	36							-.4429	8.48	.0007	-.1470	8.63
36	48							-.5250	9.34	-.0563	-.1592	8.20
48	60							-.5748	10.86	-.0873	-.1819	7.89
60	72							-.6124	11.61	-.1163	-.2181	7.62
72								-.6297	11.97	-.1503	-.2345	7.49

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	11.18	10.03	.2348	-.51	9.67
24	36					
36	48					
48	60					
60	72					

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 10
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	13.24	11.44	.2736	-.53	11.11	930

DT MR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.16	7.42	-.3400	.11	7.74	-.3795	.1536	-.0177	-.1066	6.98	10.74	.2958	1.35	10.43
24	-.27	9.27	-.4208	.21	9.52	-.4317	.2388	-.0151	-.1611	7.06	10.35	.2951	1.48	9.97
36	-.35	10.97	-.4962	.33	11.18	-.5100	.2497	-.0533	-.1689	6.93	9.92	.3006	1.15	9.52
48	-.51	12.08	-.5447	.39	12.31	-.5602	.2820	-.0904	-.1857	6.81	9.59	.2975	1.03	9.17
60	-.62	13.26	-.6021	.48	13.25	-.6001	.2994	-.1089	-.2125	6.71	9.13	.2958	1.05	8.85
72	-.79	13.80	-.6308	.51	13.58	-.6139	.3185	-.1294	-.2274	6.55	8.87	.2872	1.00	8.74

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	15.79	12.68	.3133	-.66	12.65	930	-.17	7.68	.17	.00	11.98
24							-.30	10.19	.28	10.62	11.42
36							-.43	12.00	.40	12.64	10.89
48							-.57	13.33	.46	13.85	10.51
60							-.76	14.50	.57	14.72	10.20
72							-.88	15.35	.65	15.34	9.87

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	14.50	-1.25	8.12	12.01	.3402	.79	11.98
			8.30	11.52	.3477	1.24	11.42
			8.27	11.08	.3563	1.12	10.89
			8.24	10.72	.3546	1.20	10.51
			8.19	10.29	.3577	1.31	10.20
			8.12	9.95	.3494	1.43	9.87

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 12
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	18.45	13.93	.3365	-1.11	13.86	930					
24											
36											
48											
60											
72											

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.19	8.00	-.2974	.19	8.40	-.3050	9.56	13.30	.3597	-.08	13.20
24	-.36	10.67	-.3917	.31	11.20	-.4104	9.72	12.82	.3725	.75	12.63
36	-.48	12.56	-.4591	.43	13.18	-.4829	9.68	12.38	.3836	.86	12.12
48	-.60	14.04	-.5078	.51	14.49	-.5297	9.74	12.00	.3839	1.06	11.73
60	-.71	15.36	-.5559	.67	15.52	-.5637	9.73	11.58	.3841	1.24	11.40
72	-.90	16.35	-.5951	.75	16.20	-.5863	9.67	11.19	.3790	1.57	11.16

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPT KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
12	20.47	14.07	.3592	-2.26	13.67	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (XP, Y)	R (XP, YP)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-16	7.37	-.2672	.22	7.56		.1262	-.0408	10.55	13.55	.3813	-.92	13.12
24	-33	10.23	-.3683	.33	10.37		.2050	-.0583	10.72	13.08	.3930	-.05	12.60
36	-47	12.12	-.4352	.42	12.48		.2469	-.0784	10.72	12.66	.4033	.30	12.11
48	-64	13.72	-.4884	.52	14.04		.2926	-.0995	10.80	12.27	.4062	.61	11.66
60	-70	15.09	-.5380	.66	15.22		.3278	-.1107	10.68	11.85	.4074	1.01	11.30
72	-85	16.08	-.5763	.75	15.97		.3621	-.1238	10.90	11.48	.3995	1.32	11.04

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFT) - 14
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X, YP)	MEAN Y	S.D. Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	20.05	12.37	.3922	-2.79	11.84	930																
24																						
36																						
48																						
60																						
72																						

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.18	6.58	-.2718	.16	6.62	-.2912	10.68	11.90	.4176	.17	11.22
24	-.34	8.71	-.3573	.26	8.95	-.3937	10.79	11.55	.4200	.22	10.87
36	-.51	10.66	-.4345	.34	11.01	-.4780	10.84	11.13	.4277	.53	10.37
48	-.71	12.10	-.4969	.41	12.44	-.5365	10.76	10.72	.4223	.65	9.94
60	-.81	13.36	-.5500	.47	13.38	-.5725	10.75	10.31	.4193	1.02	9.64
72	-1.00	14.23	-.5897	.52	14.02	-.5976	10.76	9.95	.4100	1.33	9.39

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 15
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - UIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	18.85	10.07	.4204	-3.20	9.42	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	15.87	-3.55

DT
12
24
36
48
60
72

	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.15	5.34	-.2739	.05	5.46	-.2223	.1221	.0520	-.1138	9.42	9.63	.4496	1.20	8.97
24	-.31	7.12	-.3608	.14	7.20	-.3852	.2575	.0355	-.1872	9.72	9.34	.4511	1.22	8.63
36	-.47	8.54	-.4332	.19	8.85	-.4738	.3121	-.0356	-.2272	9.56	9.03	.4576	1.09	8.22
48	-.63	9.68	-.4896	.26	9.93	-.5342	.3701	-.0827	-.2537	9.48	8.73	.4530	1.04	7.88
60	-.78	10.65	-.5414	.29	10.83	-.5789	.3949	-.1156	-.2963	9.29	8.42	.4537	.88	7.60
72	-.96	11.31	-.5806	.33	11.36	-.6061	.4193	-.1397	-.3256	9.12	8.15	.4485	.89	7.40

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - MAY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 16
ALPHA ANGLE - 93.0

X = U(AT T)
Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	12.60	8.24	.3767	-3.11	7.39	930

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.14	4.70	-.2920	.07	4.35	-.3067	.0439	.1146	-.1345	7.38	7.82	.4160	.19	6.97
24	-.27	5.79	-.3575	.11	5.70	-.3932	.1641	.0900	-.1945	7.53	7.61	.4208	1.34	6.67
36	-.41	6.95	-.4285	.16	6.94	-.4821	.2257	.0501	-.2325	7.44	7.36	.4262	1.09	6.36
48	-.55	7.81	-.4834	.17	7.86	-.5434	.2868	-.0116	-.2575	7.24	7.14	.4208	.76	6.10
60	-.74	8.40	-.5241	.21	8.61	-.5940	.3140	-.0601	-.2606	6.90	6.97	.4232	.46	5.86
72	-.92	8.77	-.5546	.24	9.03	-.6257	.3543	-.0980	-.2815	6.67	6.82	.4166	.46	5.68

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 17
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP
12	7.80	6.74	.3549	-2.88	5.90	930													
24																			
36																			
48																			
60																			
72																			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFT) - 18
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	3.34	5.66	.2733	-2.35	4.57	930	3.14	-2.50	1.98	5.19	.3311	-1.77	4.10
24									2.06	5.14	.3349	-1.55	4.06
36									1.92	4.93	.3580	-1.64	3.79
48									1.96	4.83	.3289	-1.56	3.71
60									1.84	4.67	.3418	-1.63	3.54
72									1.75	4.56	.3055	-1.56	3.47

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 19
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-09	3.68	-.4062	.00	3.94	-.5557	-1.51	3.56	930	-.28	-1.60	-.04	4.28	.2653	-.83	2.95
24	-.18	3.50	-.3935	.01	3.44	-.4810						.08	4.28	.2541	-.84	3.08
36	-.28	4.24	-.4739	.02	4.35	-.6055						-.06	4.11	.2778	-.82	2.80
48	-.37	4.41	-.4971	.02	4.21	-.5863						-.07	4.04	.2550	-.79	2.84
60	-.47	4.95	-.5522	.03	4.68	-.6526						-.19	3.89	.2638	-.78	2.67
72	-.63	4.98	-.5719	.06	4.64	-.6521						-.23	3.82	.2282	-.72	2.65

STATION (12868)	-	CAPE KENNEDY	X = U/IAT T
MONTH OF RECORD	-	MAY	Y = V/IAT T
PERIOD OF RECORD	-	1/56 - 12/70	XP = U/IAT T
ALTITUDE (KM)	-	20	YP = V/IAT T
ALPHA ANGLE	-	90.0	

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 21
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, X)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
HR																			
12	-1.10	3.59	-.4510	-.03	3.52	-.6782	-.6782	-.0364	930	-2.29	3.66	.0707	-.24	1.90	.0409				
24	-.20	3.29	-.4122	-.01	3.06	-.5816	-.5816	-.0194		-2.29	3.74	.0567	-.54	2.10	-.0298				
36	-.28	4.05	-.5048	-.01	3.73	-.7154	-.7154	-.0279		-2.39	3.55	.0743	-.33	1.81	.0193				
48	-.40	3.90	-.4818	-.00	3.49	-.6716	-.6716	-.0399		-2.43	3.60	.0748	-.45	1.91	-.0082				
60	-.49	4.40	-.5455	-.00	3.83	-.7425	-.7425	-.0065		-2.49	3.44	.0647	-.38	1.73	-.0069				
72	-.63	4.38	-.5444	.01	3.64	-.7127	-.7127	.0043		-2.55	3.44	.0586	-.41	1.81	-.0228				

STATION (12868) - CAPE KENNEY
MONTH OF RECORD - MAY
PERIOD OF RECORD - 1/58 - 12/70
ALTITUDE (KM) - 22
ALPHA ANGLE - 90.0

X	U	T
Y	V	T

$$\begin{aligned} \dot{X}P &= U(AT \cdot DT) - U(AT \cdot T) \\ \dot{Y}P &= V(AT \cdot T \cdot DT) - V(AT \cdot T) \end{aligned}$$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. YP
12	-3.71	4.20	-.0480	-.65	2.66	930	-5.62	-.68	
12	-.12	3.51	-.03	-.6841	-.1185		3.81	-.0294	1.94
24	-.22	3.33	-.00	-.5842	-.0549		3.68	-.0594	2.16
36	-.32	3.96	-.05	-.7258	-.1126		3.84	-.0247	1.83
48	-.43	4.06	-.04	-.6880	-.0941		3.65	-.0349	1.93
60	-.51	4.39	-.07	-.7528	-.1148		3.56	-.0177	1.75
72	-.62	4.42	-.03	-.7003	-.0869		3.94	-.0401	1.90

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-6.54	4.22	-0.367	-4.48	2.65	930

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.11	3.31	-0.3957	-0.02	3.63	-0.6811	-0.0713	-0.0144	0.052	-3.40	3.87	-0.0254	-0.07	1.33
24	-0.20	3.27	-0.3975	0.00	3.16	-0.5896	-0.0096	-0.0320	0.075	-3.35	3.87	-0.0375	-0.11	2.14
36	-0.32	3.78	-0.4599	-0.03	4.03	-0.7508	-0.0453	-0.0122	0.027	-3.42	3.74	-0.0442	-0.05	1.75
48	-0.42	3.82	-0.4660	-0.03	3.66	-0.6781	-0.0056	-0.0350	0.028	-3.45	3.73	-0.0759	-0.12	1.94
60	-0.55	4.17	-0.5144	-0.05	4.13	-0.7655	-0.0323	-0.0098	0.012	-3.48	3.61	-0.0548	-0.21	1.70
72	-0.63	4.33	-0.5312	-0.01	3.71	-0.6837	-0.0221	-0.0154	-0.0108	-3.52	3.57	-0.0710	-0.25	1.93

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP, YP

	MEAN X	S.D. X	MEAN Y	S.D. Y
	-6.44	4.22	-4.48	2.65

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAR
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE (MM) - 24
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	S.D. YP
12	-7.05	4.56	.0248	2.77	930	-.48	2.77												
24																			
36																			
48																			
60																			
72																			

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (NM) - 25
 ALPHA ANGLE - 90.0

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)
	-7.20	5.02	.0060	-.63	2.82	930												
DT																		
MR																		
12	-1.3	3.68	-.3790	-.6360	-.0330	-.0355	-.3.62	4.84	-.0150	-.02	3.17	-.0421	-3.62	4.84	-.0150	-.02	3.17	-.0421
24	-.23	3.68	-.3873	-.6100	-.0229	-.0602	-3.60	4.82	-.0046	-.05	3.22	-.0426	-3.60	4.82	-.0046	-.05	3.22	-.0426
36	-.34	4.32	-.4563	-.7148	-.0034	-.0904	-3.63	4.46	-.0106	-.07	3.23	-.0386	-3.63	4.46	-.0106	-.07	3.23	-.0386
48	-.44	4.55	-.4864	-.6932	.0505	-.0870	-3.63	4.38	-.0268	-.11	3.23	-.0018	-3.63	4.38	-.0268	-.11	3.23	-.0018
60	-.54	4.68	-.5216	-.7542	.0401	-.0995	-3.59	4.28	-.0286	-.07	3.24	-.0190	-3.59	4.28	-.0286	-.07	3.24	-.0190
72	-.66	5.04	-.5462	-.7072	.0443	-.0696	-3.70	4.20	-.0298	-.20	3.20	-.0037	-3.70	4.20	-.0298	-.20	3.20	-.0037

CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)
	-7.11	5.02	.0060	-.63	2.82	930						
DT												
MR												
12	-7.11	5.02	.0060	-.63	2.82	930						
24	-7.11	5.02	.0060	-.63	2.82	930						
36	-7.11	5.02	.0060	-.63	2.82	930						
48	-7.11	5.02	.0060	-.63	2.82	930						
60	-7.11	5.02	.0060	-.63	2.82	930						
72	-7.11	5.02	.0060	-.63	2.82	930						

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 26
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X -7.18
 S.D. X 5.14
 R (X, Y) .0224
 MEAN Y -.62
 S.D. Y 2.87
 N 930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.13	3.52	-.3307	.04	3.37	-.5957	-.0741	-.0197	.0595	-3.65	5.13	.0479	.06	2.32
24	-.25	3.81	-.3630	.03	3.56	-.6170	-.0394	-.0431	.0507	-3.85	5.06	.0404	.03	2.25
36	-.36	4.34	-.4159	.04	4.02	-.7038	-.0167	-.0.02	.0584	-3.69	4.94	.0395	.11	2.02
48	-.46	4.74	-.4366	.01	4.12	-.7261	-.0034	-.0766	.0473	-3.72	4.83	.0340	.00	1.96
60	-.56	5.02	-.4867	.02	4.26	-.7487	.0201	-.0701	.0198	-3.72	4.75	.0180	-.11	1.90
72	-.69	5.32	-.5223	.01	3.99	-.7086	.0109	-.0303	.0023	-3.74	4.64	.0203	-.24	2.03

QUADRVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 27
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (X, Y)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, Y)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	-6.96	5.95	.0042	-.94	2.95	.930											
24																	
36																	
48																	
60																	
72																	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.10	3.94	-.3058	-.6099	3.60	-.0291	-3.94	5.66	.0249	.13	2.32
24	-.22	3.93	-.3453	-.6112	3.60	-.0828	-3.53	5.58	.0141	.07	2.32
36	-.34	4.59	-.4041	-.7141	4.20	-.1034	-3.80	5.43	.0150	.14	2.37
48	-.44	4.90	-.4322	-.7070	4.15	-.1057	-3.61	5.36	-.0030	-.01	2.00
60	-.54	5.35	-.4731	-.7324	4.28	-.0977	-3.84	5.24	-.0190	-.14	2.00
72	-.66	5.67	-.4993	-.7230	4.20	-.0862	-3.72	5.15	-.0228	-.18	2.03

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12068) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
5	1/56 - 12/70	0	90.0	-1.67	2.89	-.0657	.53	2.55	930
5	1/56 - 12/70	1	90.0	-.97	5.28	-.1271	-.94	4.25	930
5	1/56 - 12/70	2	90.0	.44	5.68	.2731	-.17	4.49	930
5	1/56 - 12/70	3	90.0	1.65	6.00	.2818	-.31	4.77	930
5	1/56 - 12/70	4	90.0	2.91	6.50	.2669	-.40	5.27	930
5	1/56 - 12/70	5	90.0	4.42	6.96	.2637	-.54	5.70	930
5	1/56 - 12/70	6	90.0	6.06	7.47	.2556	-.64	6.52	930
5	1/56 - 12/70	7	90.0	7.76	8.17	.2787	-.60	7.29	930
5	1/56 - 12/70	8	90.0	9.43	9.09	.2551	-.44	8.27	930
5	1/56 - 12/70	9	90.0	11.18	10.03	.2548	-.51	9.67	930
5	1/56 - 12/70	10	90.0	13.24	11.44	.2736	-.53	11.11	930
5	1/56 - 12/70	11	90.0	15.79	12.68	.3133	-.66	12.65	930
5	1/56 - 12/70	12	90.0	18.45	13.93	.3365	-1.11	13.86	930
5	1/56 - 12/70	13	90.0	20.47	14.07	.3522	-2.26	13.67	930
5	1/56 - 12/70	14	90.0	20.05	12.37	.3922	-2.79	11.84	930
5	1/56 - 12/70	15	90.0	16.85	10.07	.4204	-3.20	9.42	930
5	1/56 - 12/70	16	90.0	12.60	8.24	.3767	-3.11	7.39	930
5	1/56 - 12/70	17	90.0	7.80	6.74	.3549	-2.88	5.90	930
5	1/56 - 12/70	18	90.0	3.34	5.66	.2733	-2.35	4.57	930
5	1/56 - 12/70	19	90.0	-.23	4.69	.1905	-1.61	3.56	930
5	1/56 - 12/70	20	90.0	-2.64	4.28	.1699	-1.22	2.90	930
5	1/56 - 12/70	21	90.0	-4.49	4.11	.0413	-.75	2.59	930
5	1/56 - 12/70	22	90.0	-5.71	4.20	-.0480	-.65	2.66	930
5	1/56 - 12/70	23	90.0	-6.54	4.22	-.0367	-.48	2.65	930
5	1/56 - 12/70	24	90.0	-7.05	4.56	.0248	-.48	2.77	930
5	1/56 - 12/70	25	90.0	-7.20	5.02	.0060	-.63	2.82	930
5	1/56 - 12/70	26	90.0	-7.18	5.44	.0224	-.62	2.87	930
5	1/56 - 12/70	27	90.0	-8.96	5.95	.0042	-.64	2.95	930

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112359) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 0
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (X,Y)	R (XP,Y)	R (XP,X)
12	.02	3.32	-.6267	-.00	2.65	-.5577	.93	2.38	900	.1392	.0614	.0614
24	.04	2.69	-.5088	-.01	2.55	-.5366				.0959	-.0910	-.0910
36	.05	3.72	-.6935	.02	3.00	-.6397				.1757	.0314	.0314
48	.09	3.11	-.5868	.04	3.03	-.6522				.0860	-.0421	-.0421
60	.11	3.97	-.7490	.06	3.21	-.6927				.1169	.0302	.0302
72	.13	3.24	-.6172	.08	3.23	-.6981				.0474	-.0351	-.0351

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	GIVEN X	MEAN YP	S.D. YP	GIVEN Y
	-1.08	2.68	-1.10	.93	2.38	.99

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N													
	.12	5.13	.19	1.65	3.86	900													

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - JFE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 2
 ALPHA ANGLE - 90 0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
1.27	5.04	.1928	.92	4.00	900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.01	3.64	-.3691	.03	2.51	-.4364	.0832	.38	4.64	.2133	.57	3.55
24	.02	4.39	-.4421	.04	4.12	-.5109	.1580	.40	4.45	.2010	.55	3.37
36	.05	5.38	-.5421	.06	5.03	-.6277	.1192	.47	4.19	.2274	.49	3.06
48	.04	5.84	-.5884	.07	5.24	-.6540	.1460	.49	4.04	.2127	.47	2.93
60	.06	6.25	-.6360	.06	5.56	-.6958	.1378	.51	3.88	.2209	.44	2.85
72	.08	6.50	-.6531	.04	5.45	-.6861	.1529	.52	3.79	.2054	.41	2.89

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12958) - CAPE KENNEDY
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/55 - 12/70
ALTITUDE (KM) - 3
ALPHA ANGLE - 90.0

$$\begin{array}{cc} X & Y \\ = & = \\ U(AT) & V(AT) \\ T) & T) \end{array}$$
$$\begin{aligned} \mathbf{x}^p &= \mathbf{U}(\mathbf{A}^T \mathbf{T} + \mathbf{D} \mathbf{T}) - \mathbf{U}(\mathbf{A}^T \mathbf{T}) \\ \mathbf{y}^p &= \mathbf{V}(\mathbf{A}^T \mathbf{T} + \mathbf{D} \mathbf{T}) - \mathbf{V}(\mathbf{A}^T \mathbf{T}) \end{aligned}$$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

OT VAR	MEAN		S.D.	R	MEAN	S.D.	M	GIVEN X	GIVEN Y	S.D.
	X	Y	X	(X,Y)	Y	Y				
	1.87		5.05	.1333	.76	4.11	900	1.96	.95	
	MEAN XP	S.D. XP	R (X,YP)	MEAN YP	S.D. YP	R (XP,Y)	R (YP,X)	S.D. XP	R (XP,Y)	S.D. YP
12	-.01	3.41	-.3381	.02	3.72	.0329	-.1249	4.71	.1568	3.62
24	-.02	4.31	-.4280	.01	4.25	.1179	-.1837	4.51	.1437	3.45
36	-.03	5.24	-.5193	.02	5.20	.0323	-.1514	4.27	.1700	3.15
48	-.04	5.71	-.5632	.02	5.44	.0825	-.1433	4.14	.1678	3.07
60	-.04	6.21	-.6155	.01	5.79	.0422	-.1340	3.95	.1775	2.92
72	-.04	6.51	-.6434	-.03	5.70	.0962	-.1472	3.84	.1616	2.97

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (120223) - CAPE KENNEL
 NORTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMS) - 4
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT) - U(1AT T)
 YP = V(1AT T + DT) - V(1AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	R (YP,X)	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)
12	-0.05	3.41	-0.3167	5.25	.1405	.59	4.25	500	-.1147	.1339	.0375	.98	4.96	.1849	.65	3.82	-.1923
24	-0.08	4.28	-.3955						-.1923	.1158	.1320	.99	4.78	.1422	.65	3.52	-.1509
36	-0.12	5.26	-.4870						-.1509	.0531	.0522	.98	4.56	.1753	.50	3.52	-.1267
48	-0.14	5.78	-.5394						-.1267	.0700	.0818	.97	4.41	.1927	.37	3.12	-.1428
60	-0.17	6.33	-.5927						-.1428	.0426	.1069	.96	4.23	.1753	.33		
72	-0.15	6.70	-.6266							.0174			4.08				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR DT = 12

DT HR	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)
12	.98	4.96	.1849	.65	3.82	-.1923
24	.99	4.78	.1422	.65	3.52	-.1509
36	.98	4.56	.1753	.50	3.52	-.1267
48	.98	4.41	.1927	.37	3.12	-.1428
60	.97	4.23	.1753	.33		
72	.96	4.08				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128581) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.05	3.65	-.3262	5.57	.1087	.28	4.41	900	1.14	5.23	.1423	.52	3.91
24	-.08	4.62	-.4089						1.17	5.03	.1302	.48	3.77
36	-.13	5.59	-.4949						1.16	4.80	.1497	.37	3.47
48	-.17	6.17	-.5448						1.15	4.64	.1463	.30	3.40
60	-.19	6.65	-.5882						1.14	4.48	.1623	.27	3.27
72	-.19	6.93	-.6153						1.15	4.37	.1550	.22	3.28

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128881) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 6
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.91	5.92	.1681	-.13	4.71	900				2.90	-.02					
24	3.88	4.94	-.3275	-.02	3.83		-.4078	-.0106				1.42	5.55	.2000	.36	4.25
36	4.94	4.94	-.4143	-.01	4.67		-.4950	.0835				1.40	5.32	.1934	.34	4.02
48	5.86	4.89	-.4892	-.02	5.52		-.5856	.0566				1.42	5.11	.2195	.22	3.76
60	6.40	5.33	-.5333	-.01	5.84		-.6178	.0876				1.39	4.96	.2113	.16	3.66
72	6.99	5.84	-.5841	-.00	6.21		-.6538	.0694				1.35	4.77	.2331	.11	3.53
	7.27	6.10	-.6101	-.01	6.25		-.6565	.0910				1.32	4.66	.2220	.06	3.53

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 7
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.10	4.36	-.3320	-.02	3.98	-.3996	-.25	5.10	900	1.92	5.13	.2469	.36	4.63
24	-.16	5.43	-.4106	-.01	4.95	-.4902				1.90	5.90	.2563	.35	4.38
36	-.27	6.44	-.4893	-.02	5.65	-.5566				1.83	5.64	.2629	.24	4.18
48	-.37	7.00	-.5330	-.05	6.08	-.5904				1.75	5.49	.2826	.14	4.05
60	-.44	7.59	-.5811	-.07	6.48	-.6368				1.70	5.29	.2823	.06	3.90
72	-.53	7.92	-.6094	-.07	6.72	-.6613				1.65	5.15	.2732	.03	3.80

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
3.48	-.16

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - JUN
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 8
 ALPHA ANGLE - 50.0

X = U(AT, T)
 Y = V(AT, T)

XP = U(AT, T + DT) - U(AT, T)
 YP = V(AT, T + DT) - V(AT, T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	4.28	-7.32	.2449	-.29	5.77	900					
24											
36											
48											
60											
72											

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
3.88	-.25		2.34	6.89	.2664	.37	5.30
			2.33	6.66	.2724	.33	5.06
			2.27	6.38	.2823	.23	4.83
			2.17	6.25	.2980	.12	4.67
			2.09	5.99	.3022	.03	4.48
			2.02	5.89	.3035	-.02	4.36

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 9
 ALPHA ANGLE - 90.0

X - U(IAT T)
 Y - V(IAT T)
 XP - U(IAT T + DT) - U(IAT T)
 YP - V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	5.20	8.50	.2755	-.29	6.84	900	2.85	8.04	.0194	2.85	8.04
24							2.82	7.80	.0048	2.82	7.80
36							2.74	7.54	-.0168	2.74	7.54
48							2.65	7.35	-.0251	2.65	7.35
60							2.55	7.06	-.0617	2.55	7.06
72							2.46	6.96	-.0796	2.46	6.96

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
4.68	-.31	.2931	2.85	8.04	.2931	.34	6.34
		.3040	2.82	7.80	.3040	.26	6.05
		.3101	2.74	7.54	.3101	.18	5.77
		.3263	2.65	7.35	.3263	.10	5.60
		.3284	2.55	7.06	.3284	-.02	5.41
		.3330	2.46	6.96	.3330	-.08	5.28

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (ft) - 10
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 5.94
 S.D. X 9.81
 R (X, Y) .2893
 MEAN Y -.45
 S.D. Y 8.26
 N 900

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.16	5.87	-.3044	-.03	6.16	-.3793	-.45	8.26	900	3.27	9.33	.3027	.10	7.63
24	-.33	7.29	-.3750	-.03	7.62	-.4720				3.19	9.08	.3206	.10	7.27
36	-.48	8.77	-.4514	-.08	8.68	-.5384				3.12	8.74	.3226	.03	6.95
48	-.60	9.54	-.4932	-.09	9.17	-.5710				3.03	8.52	.3347	-.03	6.77
60	-.78	10.41	-.5372	-.14	9.76	-.6131				2.92	8.26	.3359	-.13	6.52
72	-.92	10.76	-.5558	-.10	10.14	-.6383				2.84	8.15	.3479	-.19	6.35

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X 5.28
 GIVEN Y -.50

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFT) - 11
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.18	6.47	-2972	-06	6.76	3194	-74	9.58	900	3.70	10.62	.3343	.00	8.93	.3343	.00	8.93
24	-1.37	8.10	-3724	-07	8.38					3.61	10.32	.3436	.04	11.94	.3436	.04	11.94
36	-1.94	9.90	-4564	-10	9.81					3.50	9.89	.3426	.11	8.13	.3426	.11	8.13
48	-1.72	10.66	-4933	-14	10.39					3.36	9.68	.3512	.28	7.80	.3512	.28	7.80
60	-1.94	11.57	-5350	-22	10.93					3.21	9.40	.3473	.44	7.64	.3473	.44	7.64
72	-1.13	12.02	-5544	-30	11.33					3.12	9.26	.3607	.49	7.46	.3607	.49	7.46

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - C.F. KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/52 - 12/70
 ALTITUDE (KM) 12
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	7.90	12.59	.3353	-1.60	10.92	900					
24											
36											
48											
60											
72											

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
7.14	-1.78	4.19	12.03	.3482	-76	10.26
		4.15	11.74	.3536	-59	9.90
		3.99	11.24	.3541	-64	9.41
		3.84	10.98	.3644	-78	9.16
		3.63	10.65	.3596	-99	8.80
		3.55	10.50	.3785	-1.02	8.65

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12958) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(A T)
 YP = V(AT T + DT) - V(A T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)
12	8.72	13.28	.3392	-2.88	11.03	900						
24												
36												
48												
60												
72												

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)
12	-1.25	7.30	.3512	-1.23	10.43	
24	-1.46	8.86	.3563	-1.02	10.09	
36	-1.71	10.85	.3576	-1.06	9.64	
48	-1.00	11.91	.3690	-1.28	9.34	
60	-1.36	13.02	.3617	-1.50	8.95	
72	-1.68	13.58	.3780	-1.67	8.76	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN X	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.27	8.13	-2.82	-0.07	6.18	-3.358	.0733	-.0022	-.0519	4.46	12.01	900	7.01	-4.33	4.46	12.01	.3449	-1.74	8.92
24	-1.49	7.47	-2.345	-1.11	7.27	-3.358	.1408	-.0147	-.0860	4.53	11.84				4.53	11.84	.3472	-1.60	8.69
36	-1.74	9.35	-3.743	-1.13	8.84	-4.049	.1882	-.0456	-.1238	4.42	11.48				4.42	11.48	.3459	-1.61	8.28
48	-1.02	10.27	-4.034	-1.17	9.80	-5.444	.1806	-.0552	-.1303	4.23	11.30				4.23	11.30	.3518	-1.74	7.94
60	-1.39	11.56	-4.641	-1.24	10.42	-5.845	.1883	-.0839	-.1448	4.00	10.97				4.00	10.97	.3498	-1.87	7.68
72	-1.71	12.15	-4.853	-1.32	10.94	-6.163	.1832	-.1027	-.1433	3.81	10.83				3.81	10.83	.3533	-1.99	7.46

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12058) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	MEAN XP	R (XP, YP)	S.D. YP	MEAN YP	S.D. YP
12	5.30	10.32	.2622	-5.01	7.18	900	4.54	-5.15	9.98	3.55	.0963	9.82	-1.80	6.70
24									9.82	3.72	.1172	9.82	-1.61	6.45
36									9.56	3.46	.1469	9.56	-1.83	6.18
48									9.33	3.26	.1733	9.33	-1.96	5.97
60									9.12	3.01	.1947	9.12	-2.04	5.81
72									8.96	2.83	.2102	8.96	-2.14	5.66

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KEMNEY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (M) - 16
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N
	1.95	7.55	.2393	-4.20	5.28	900
DT 1/P	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)
12	.22	4.24	-.2925	-.4089	4.22	-.4089
24	-.43	4.69	-.3282	-.4411	4.49	-.4411
36	-.84	5.75	-.3357	-.5308	5.32	-.5308
48	-.88	6.25	-.4319	-.5661	5.69	-.5661
60	-1.03	6.91	-.4774	-.6123	6.11	-.6123
72	-1.32	7.26	-.5061	-.6347	6.35	-.6347

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y			
	1.42	-4.31			
	S.D. XP	R (XP, YP)	MEAN XP	MEAN YP	S.D. YP
12	1.57	.2650	7.20	-1.85	4.81
24	1.75	.2545	7.09	-1.66	4.70
36	1.53	.2531	6.88	-1.67	4.44
48	1.37	.2456	6.77	-1.73	4.33
60	1.20	.2426	6.59	-1.76	4.16
72	1.03	.2297	6.47	-1.82	4.07

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12958) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 17
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-1.15	5.58	.1917	-3.02	4.11	900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	-1.47	-3.09

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.18	3.88	-.3629	.02	4.03	-.5047	.0126	-.0484	-.29	5.19	.2351	-1.50	3.54
24	-.35	3.84	-.3615	.03	3.98	-.5062	.0453	-.0727	-.31	5.19	.2299	-1.47	3.53
36	-.50	4.64	-.4355	.01	4.66	-.5984	.1013	-.1096	-.40	5.01	.2226	-1.43	3.27
48	-.66	4.99	-.4650	.02	4.72	-.6121	.1519	-.1239	-.53	4.93	.2066	-1.38	3.24
60	-.83	5.44	-.5127	.00	5.06	-.6587	.1493	-.1282	-.63	4.78	.1956	-1.37	3.09
72	-1.00	5.70	-.5398	-.01	5.04	-.6566	.1791	-.1402	-.75	4.69	.1771	-1.37	3.10

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1:56 12/76
 ALTITUDE (KTI) - 18
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	-4.21	4.44	.1154	-2.06	3.19	900	-2.03	4.00	.1801	-1.93	2.54	.0269	-1.21	2.65
24							-1.89	4.05	.1615	-1.06	2.40	.0436	-1.06	2.40
36							-2.02	3.86	.1593	-1.02	2.46	.0515	-1.02	2.46
48							-2.08	3.84	.1282	-1.97	2.29	.0812	-1.97	2.29
60							-2.16	3.69	.0981	-1.00	2.32	.1020	-1.00	2.32
72							-2.18	3.67	.0938			.1173		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1968) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 19
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-6.68	3.78	.134	-1.22	2.75	900								
24														
36														
48														
60														
72														

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.2	3.56	.03	.715	.0949	-.0897	-3.32	3.32	.1539	-.44	2.04
24	-.25	3.18	.04	-.579	-.0407	.0710	-3.24	3.41	.1894	-.82	2.26
36	-.36	3.84	.06	-.710	.1432	-.0926	-3.39	3.23	.1356	-.58	1.93
48	-.46	3.82	.06	-.6324	.0667	-.0244	-3.39	3.21	.1666	-.61	2.13
60	-.56	4.26	.08	-.7260	.1938	-.1307	-3.45	3.06	.0927	-.57	1.89
72	-.65	4.24	.07	-.6603	.1296	-.0725	-3.47	3.06	.1327	-.57	2.06

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, Y)	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	-8.64	3.87	.1176	-.93	2.56	900	-4.30	3.11	-.0516	-4.30	3.11	-.0516	-4.30	3.11	-.0516	-4.30	3.11
24																	
36																	
48																	
60																	
72																	

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 21
ALPHA ANGLE - 90.0

$$\begin{array}{l} X = U(AT) \\ Y = V(AT) \end{array} \quad \begin{array}{l} X_P = U(AT) \\ Y_P = V(AT) \end{array}$$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR X _P AND Y _P																
DT	HR	MEAN X _P	S.D. X _P	R (X _P , Y _P)	MEAN Y _P	S.D. Y _P	R	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. X _P	R (X _P , Y _P)	MEAN X _P	S.D. Y _P
		-10.10	3.85	-.1068				-57	2.63	900						
											-10.07	-.61				
		MEAN X _P	S.D. X _P	R (X _P , Y _P)	MEAN Y _P	S.D. Y _P	R	MEAN Y	S.D. Y	N						
12	24	-.08	4.83	-.6306	-.01	3.87	-.7356	-.3393	2.100	2.335			2.90	.0998	-5.14	1.78
	36	-.20	3.33	-.4185	-.01	3.13	-.5943	-.0531	1.0455	.0240			3.50	-.1188	-5.31	2.12
	48	-.27	4.99	-.6414	-.02	4.01	-.7618	-.2776	1.906	.2035			2.96	.0705	-5.32	1.70
	60	-.39	3.74	-.4598	-.01	3.43	-.6494	-.0671	.0056	.0080			3.42	-.1497	-5.32	2.00
	72	-.45	5.35	-.6813	-.05	4.01	-.7536	-.2328	1.845	1.585			2.82	-.0391	-5.38	1.73
		-.54	4.17	-.5172	-.06	3.45	-.6423	.0261	-.0025	-.0273			3.30	-.1784	-5.53	2.02

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	-11.43	3.65	-0.1461	-0.44	2.99	900						-11.41	-0.44					
DT																		
MR																		
12	-0.08	4.01	-0.5515	-0.01	4.63		-0.7760	0.3447	0.2305	-0.2189	0.2189	3.05	0.0072	-5.86	3.05	0.0072	0.13	1.88
24	-0.18	3.40	-0.4585	-0.00	3.35		-0.5623	-0.0731	0.0338	0.0380	0.0380	3.25	-0.1742	-5.91	3.25	-0.1742	-0.15	2.47
36	-0.26	4.14	-0.5628	0.01	4.72		-0.7903	-0.2808	0.2282	0.1648	0.1648	3.02	-0.0243	-5.91	3.02	-0.0243	-0.27	1.83
48	-0.37	3.77	-0.5066	0.04	3.64		-0.6025	-0.0631	0.0430	0.0342	0.0342	3.15	-0.1786	-6.02	3.15	-0.1786	-0.25	2.39
60	-0.48	4.34	-0.5644	0.04	4.84		-0.8032	-0.2712	0.2310	0.1681	0.1681	2.97	-0.0071	-6.08	2.97	-0.0071	-0.32	1.78
72	-0.58	4.02	-0.5414	0.02	3.60		-0.5958	-0.0013	0.0063	0.0131	0.0131	3.07	-0.2004	-6.11	3.07	-0.2004	-0.26	2.40

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12068) - CAPE KENNEDY
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 23
ALPHA ANGLE - 90.0

X = UIAT T)
Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	GIVEN X	GIVEN Y
12	-1.10	3.82	-.5062	-.00	4.49	-.7599	-12.57	3.81	-.0813	-1.40	2.96	900	-6.45	3.28	-.0585	.20	1.92			
24	-.21	3.56	-.4617	-.01	3.38	-.5746							-6.53	3.38	-.0483	-.04	2.42			
36	-.29	4.07	-.5287	-.01	4.57	-.7785							-6.53	3.23	-.0759	-.09	1.85			
48	-.38	4.09	-.5275	.02	3.49	-.5917							-6.60	3.23	-.0651	-.18	2.38			
60	-.48	4.35	-.5635	.02	4.68	-.7914							-6.63	3.14	-.0837	-.23	1.81			
72	-.58	4.21	-.5460	.01	3.74	-.6319							-6.65	3.19	-.0779	-.35	2.29			

STATION (12668) - CAPE KENNEDY
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (M) - 24
ALPHA ANGLE - 90.0

$$\begin{aligned} Y &= U(A)Y \\ Y &= V(A)Y \\ X^2 &= U(A)X \\ Y_0 &= V(A)Y_0 \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP				
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	-13.31	4.11	-.0422	-.42	2.71	900					-13.27	-.42		
OT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (YP,Y)	R (YP,X)					
12	-.12	4.17	-.5018	-.01	3.91	-.7210	-.0254	-.0013	.0375		3.55	-.0440	-.02	1.55
24	-.23	3.75	-.4520	-.02	3.52	-.6457	-.0009	.0000	.0010		3.52	-.0000	-.03	2.00
36	-.33	4.35	-.6351	-.04	4.02	-.7458	-.0010	.0000	.0000		3.50	-.0003	-.18	1.50
48	-.44	4.18	-.5982	-.02	3.68	-.6769	-.0005	.0000	.0000		3.50	-.0005	-.21	1.50
60	-.50	4.50	-.6570	-.03	3.99	-.7352	-.0005	.0000	.0000		3.50	-.0000	-.24	1.50
72	-.54	4.40	-.5820	-.01	3.74	-.6855	-.0000	.0000	.0000		3.50	-.0000	-.29	1.50

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KMH) - 26
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (X, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (X, YP)	MEAN YP
12	-14.34	4.69	-0.0763	-6.69	2.82	900													
24																			
36																			
48																			
60																			
72																			

c7

STATION (12968) - CAPE KENNEDY
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 27
ALPHA ANGLE - 90.0

$$\begin{array}{l} X = U(AT) \\ Y = V(AT) \end{array} \quad \begin{array}{l} XP = U(AT) \\ YP = V(AT) \end{array}$$

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

MEAN \bar{X}	S.D. σ_x	R (X, Y)	MEAN \bar{Y}	S.D. σ_y	N
-14.65	5.04	-.0857	-.65	2.88	900

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	S.D. YP
12		-.14	4.30	-.4305	-.01	3.96	-.6911	-.1246	.0398	-.7.45	4.55	-.0810	2.08
26		-.26	4.43	-.4417	-.03	3.81	-.6827	-.0736	.0193	-.7.48	4.37	-.1084	2.16
35		-.39	5.02	-.4931	.02	4.00	-.7210	-.1203	.0837	-.7.59	4.32	-.03.5	1.93
48		-.51	5.10	-.5137	.02	4.00	-.6311	-.0784	.0247	-.7.52	4.33	-.1119	2.03
60		-.65	5.35	-.5416	.02	4.11	-.7681	-.1108	.0444	-.7.57	4.24	-.0932	2.04
72		-.75	5.46	-.5560	.02	3.92	-.6680	-.0571	.0322	-.7.52	4.19	-.1239	2.15

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12868) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
6	1/56 - 12/70	0	90.0	-1.08	2.68	.0014	.93	2.38	900
6	1/56 - 12/70	1	90.0	.12	5.13	.1921	1.65	3.86	900
6	1/56 - 12/70	2	90.0	1.27	5.04	.1908	.92	4.00	900
6	1/56 - 12/70	3	90.0	1.87	5.05	.1333	.76	4.11	900
6	1/56 - 12/70	4	90.0	2.27	5.26	.1106	.59	4.25	900
6	1/56 - 12/70	5	90.0	2.56	5.57	.1087	.26	4.41	900
6	1/56 - 12/70	6	90.0	2.91	5.92	.1681	.13	4.71	900
6	1/56 - 12/70	7	90.0	3.61	6.54	.2292	-.25	5.10	900
6	1/56 - 12/70	8	90.0	4.26	7.32	.2449	-.29	5.77	900
6	1/56 - 12/70	9	90.0	5.20	8.50	.2755	-.29	6.84	900
6	1/56 - 12/70	10	90.0	5.94	9.81	.2833	-.45	8.26	900
6	1/56 - 12/70	11	90.0	6.75	11.13	.3134	-.74	9.58	900
6	1/56 - 12/70	12	90.0	7.93	12.59	.3253	-1.60	10.92	900
6	1/56 - 12/70	13	90.0	9.22	13.28	.3332	-2.88	11.03	900
6	1/56 - 12/70	14	90.0	9.73	12.41	.3252	-4.21	9.48	900
6	1/56 - 12/70	15	90.0	5.30	10.32	.2622	-5.01	7.18	900
6	1/56 - 12/70	16	90.0	1.15	7.55	.2333	-4.20	5.28	900
6	1/56 - 12/70	17	90.0	-1.23	5.58	.1917	-3.02	4.11	900
6	1/56 - 12/70	18	90.0	-3.34	4.44	.1154	-2.06	3.19	900
6	1/56 - 12/70	19	90.0	-3.34	3.87	.1176	-1.22	2.75	900
6	1/56 - 12/70	20	90.0	-3.34	3.95	-.1068	-.93	2.56	900
6	1/56 - 12/70	21	90.0	-3.34	3.55	-.1461	-.57	2.63	900
6	1/56 - 12/70	22	90.0	-3.34	3.81	-.0813	-.44	2.99	900
6	1/56 - 12/70	23	90.0	-3.34	4.11	-.0422	-.43	2.96	900
6	1/56 - 12/70	24	90.0	-3.34	4.45	-.0665	-.42	2.71	900
6	1/56 - 12/70	25	90.0	-3.34	4.69	-.0763	-.57	2.64	900
6	1/56 - 12/70	26	90.0	-3.34	5.04	-.0857	-.85	2.82	900
6	1/56 - 12/70	27	90.0	-14.65				2.88	900

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12828) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 0
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.02	2.86	-.6311	1.48	1.84	930	-.30	1.78	.0061	.68	1.42
24	.03	2.30	-.5119				-.31	1.97	-.1230	.67	1.45
36	.06	3.06	-.6833				-.27	1.67	-.0188	.67	1.34
48	.03	2.72	-.6127				-.27	1.81	-.1308	.68	1.34
60	.07	3.23	-.7202				-.25	1.59	-.0491	.68	1.27
72	.07	2.87	-.6426				-.23	1.76	-.1809	.68	1.28

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112888) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) -
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN XP	S.D. YP	P (XP, YP)	MEAN Y	S.D. Y	R (XP, Y)	MEAN X	S.D. X	P (X, Y)	R (X, Y)	MEAN YP	S.D. XP	R (XP, YP)	MEAN X	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.08	2.95	-.3222	.02	3.25	-.4711	.28	4.15	-.0406	-.0785	.34	4.05	-.0428	.28	4.15	-.0406	.34	4.05
24	.13	3.45	-.3333	.03	3.37	-.5200	.34	4.05	-.0428	-.0723	.42	3.81	-.0759	.42	3.81	-.0759	.42	3.81
36	.15	4.15	-.5000	.03	4.06	-.6222	.42	3.65	-.0817	-.0554	.48	3.45	-.0800	.48	3.45	-.0800	.48	3.45
48	.17	4.25	-.5520	.04	4.25	-.6523	.48	3.45	-.0800	-.0508	.49	3.35	-.0538	.49	3.35	-.0538	.49	3.35
60	.18	5.51	-.6211	.04	4.43	-.6855	.49	3.35	-.0538	-.0289	.49	3.35	-.0538	.49	3.35	-.0538	.49	3.35
72	.15	5.74	-.6473	.04	4.43	-.6855	.49	3.35	-.0538	-.0289	.49	3.35	-.0538	.49	3.35	-.0538	.49	3.35

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN XP	S.D. YP	R (XP, Y)	MEAN Y	S.D. Y	R (XP, Y)	MEAN X	S.D. X	P (X, Y)	R (X, Y)	MEAN YP	S.D. XP	R (XP, YP)	MEAN X	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.08	2.95	-.3222	.02	3.25	-.4711	.28	4.15	-.0406	-.0785	.34	4.05	-.0428	.28	4.15	-.0406	.34	4.05
24	.13	3.45	-.3333	.03	3.37	-.5200	.34	4.05	-.0428	-.0723	.42	3.81	-.0759	.42	3.81	-.0759	.42	3.81
36	.15	4.15	-.5000	.03	4.06	-.6222	.42	3.65	-.0817	-.0554	.48	3.45	-.0800	.48	3.45	-.0800	.48	3.45
48	.17	4.25	-.5520	.04	4.25	-.6523	.48	3.45	-.0800	-.0508	.49	3.35	-.0538	.49	3.35	-.0538	.49	3.35
60	.18	5.51	-.6211	.04	4.43	-.6855	.49	3.35	-.0538	-.0289	.49	3.35	-.0538	.49	3.35	-.0538	.49	3.35
72	.15	5.74	-.6473	.04	4.43	-.6855	.49	3.35	-.0538	-.0289	.49	3.35	-.0538	.49	3.35	-.0538	.49	3.35

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 2
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT HP	1.18	4.45	.0981	1.85	3.45	930						
12	.05	3.18		-.4648	.0536			.01	3.16		.83	3.05
24	.12	3.57		-.5204	.1502			.04	3.53		.84	2.84
36	.15	4.58		-.6228	.1617			.06	4.25		.90	2.70
48	.18	5.03		-.6403	.1836			.08	4.38		.90	2.65
60	.19	5.53		-.6823	.1460			.09	4.67		.90	2.52
72	.19	5.75		-.6861	.1436			.11	4.71		.91	2.51

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
GIVEN X	1.30	1.95			
GIVEN Y					

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1268) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP,YP)	MEAN YP	S.D. YP
DT	1.35	4.59	.1239	1.62	3.51	930						1.58	1.66			
12	.03	3.04	-.3203	-.4253	.0370	.0238	-.0834	.49	.434	.1276	.89					3.17
24	.12	3.75	-.4015	-.5131	.1580	-.0365	-.1053	.56	.420	.1115	.86					3.01
36	.15	4.65	-.5203	-.6146	.1505	-.0946	-.0884	.63	3.98	.1076	.83					2.77
48	.20	5.09	-.5501	-.6501	.1583	-.1107	-.0836	.67	3.84	.1029	.82					2.67
60	.23	5.32	-.5375	-.6875	.1668	-.1274	-.0883	.68	3.68	.0955	.83					2.55
72	.19	5.78	-.5233	-.6965	.1632	-.1276	-.0821	.69	3.57	.1039	.84					2.52

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: 112068 - CAPE WENEDY
 MONTH OF RECORDS - JULY
 PERIOD OF RECORDS - 1/56 - 12/70
 NUMBER OF RECORDS - 10
 ALPHA ANGLES - 30.0

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP			
	1.36	4.79	.1173	1.45	3.77	930			1.56		1.43				

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858)	-	CAPE KENNEDY	X = U/IAT T)
MONTH OF RECORD	-	JULY	Y = V/IAT T)
PERIOD OF RECORD	-	1/56 - 12/70	XP = U/IAT T)
ALTITUDE (KM)	-	5	YP = V/IAT T)
ALPHA ANGLE	-	90.0	

$$\begin{aligned} X &= U(AT) \\ Y &= V(AT) \\ XP &= U(AT + DT) - U(AT) \\ YP &= V(AT + DT) - V(AT) \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X,Y,YP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
1.16	4.86	.0779	1.10	3.86	930	1.33	.99
MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	S.D. XP	R (XP,YP)
.05	3.25	-.3260	-.4339	.0782	.0499	.48	.0778
.10	3.95	-.4921	-.4934	.0994	.0232	.42	.0718
.13	4.83	-.5973	-.5385	.1184	-.0246	.42	.0619
.16	5.31	-.6439	-.6453	.1109	-.0626	.405	.0662
.17	5.84	-.6076	-.6327	.1035	-.0929	.386	.0697
.16	6.05	-.6302	-.7054	.0963	-.1008	.377	.0816
S.D. YP	MEAN YP	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
3.46	.73	-.0900	.48	4.58	.0778	.73	3.46
3.33	.69	-.1018	.53	4.42	.0718	.69	3.33
3.08	.66	-.0979	.58	4.18	.0619	.66	3.08
2.95	.63	-.0833	.57	4.05	.0662	.63	2.95
2.78	.61	-.0753	.60	3.86	.0697	.61	2.78
2.73	.61	-.0718	.61	3.77	.0816	.61	2.73

X	-	U'AT	Y
Y	-	V'AT	Y

XP	-	U'AT	Y
YP	-	V'AT	Y

3.7.15.16.12 3.7.15.16.12 3.7.15.16.12

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR x_p AND y_p

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 7
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = V(IAT T)

XP = UIAT T + DT) - UIAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP											
MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X,YP)	MEAN Y	S.D. Y	R (Y,XP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
.28	5.01	.0897	.37	4.36	330	.37	4.36	.0924	.09	4.68	.37	4.68	.0857	.29	4.50	.1007	.12	4.28	.1120	.25	3.43
								.0458	.10	4.28		4.28	.0428	.27	4.11	.1030	.14	4.01	.0983	.24	3.18
								.0663	.14	4.01		4.01	.0633	.24	3.93	.1182	.14	3.93	.1182	.22	3.13
								.0836	.14	3.93		3.93	.0833	.22	3.13		.14	3.93		.22	3.13

DIABYARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112953 - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1955 - 2170
 NUMBER OF OBS. - 9
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T - DT) - U(IAT T)
 YP = V(IAT T - DT) - V(IAT T)

DIABYARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (X, Y)	N
DT 12	-1.10	5.95	.1673	-1.10	4.72	.930	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X GIVEN Y	S.D. X GIVEN Y	MEAN Y GIVEN X	S.D. Y GIVEN X
DT 12	.00	3.78	.3430	-.01	3.82	.0911	-.06	5.20	.02	4.29
24	.01	4.78	.4356	-.04	4.60	.0823		4.97	.01	4.08
36	.02	5.53	.5346	-.05	5.35	.0778		4.68	-.01	3.83
48	.01	6.16	.5750	-.03	5.84	.0805		4.94	.01	3.63
60	-.02	6.51	.6059	-.04	6.12	.1133		4.41	.01	3.49
72	-.02	6.77	.6277	-.08	6.30	.1250		4.32	-.01	3.41

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12888) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 10
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.01	7.44	.3200	-1.21	6.11	930						-1.09	-1.49					
12	-.01	5.04	-.3460	-.3825	4.60		-.3825	4.60	.1387	-.31	6.96			-.31	6.96	.3474	-.53	5.82
24	-.00	6.42	-.4409	-.4905	5.85		-.4905	5.85	.2055	-.38	6.66			-.38	6.66	.3470	-.51	5.31
36	-.03	7.66	-.5343	-.5826	6.91		-.5826	6.91	.2265	-.39	6.27			-.39	6.27	.3499	-.51	4.96
48	-.07	8.24	-.5733	-.6284	7.45		-.6284	7.45	.2497	-.44	6.08			-.44	6.08	.3411	-.49	4.75
60	-.13	8.94	-.6219	-.6635	7.88		-.6635	7.88	.2513	-.49	5.82			-.49	5.82	.3388	-.51	4.57
72	-.18	9.26	-.6466	-.6813	8.13		-.6813	8.13	.2994	-.52	5.67			-.52	5.67	.3098	-.55	4.47

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12859) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N					MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP				
	-1.47	8.67	.3326	-1.92	6.80	930													
DT	MEAN YP	S.D. YP	F (X, YP)	MEAN YP	S.D. YP	R (XP, Y)	R (YP, X)												
1	-1.06	5.92	-3.27	-1.01	5.16	.0029	-.0922			-.53	8.13	.3604	-.83	6.25					
2	-1.11	7.33	-4.25	-1.07	6.49	-.0494	-.1330			-.61	7.82	.3614	-.84	5.92					
3	-1.11	9.22	-5.33	-1.10	7.75	-.0971	-.1707			-.64	7.33	.3632	-.83	5.49					
4	-1.20	9.77	-5.74	-1.10	8.36	-.1260	-.1988			-.67	7.08	.3548	-.83	5.24					
5	-1.26	10.60	-6.69	-1.15	8.93	-.1823	-.2146			-.75	6.74	.3339	-.84	5.02					
6	-1.34	11.90	-7.71	-1.21	9.10	-.2130	-.2441			-.79	6.60	.3051	-.88	4.94					

2000 1000 500 250 125 62.5 31.25 15.625 7.8125 3.90625 1.953125 0.9765625 0.48828125 0.244140625 0.1220703125 0.06103515625 0.030517578125 0.0152587890625 0.00762939453125 0.003814697265625 0.0019073486328125 0.00095367431640625 0.000476837158203125 0.0002384185791015625 0.00011920928955078125 0.000059604644775390625 0.0000298023223876953125 0.00001490116119384765625 0.000007450580596923828125 0.0000037252902984619140625 0.00000186264514923095703125 0.000000931322574615478515625 0.0000004656612873077392578125 0.00000023283064365386962890625 0.000000116415321826934814453125 0.000000582076609134674072265625 0.0000002910383045673370361328125 0.00000014551915228366851806640625 0.000000072759576141834259033203125 0.0000000363797880709171295166015625 0.00000001818989403545856475830078125 0.000000009094947017729282379150390625 0.0000000045474735088646411895751953125 0.00000000227373675443232059478759765625 0.000000001136868377216160297393798828125 0.0000000005684341886080801486968994140625 0.00000000028421709430404007434844970703125 0.000000000142108547152020037174224853515625 0.0000000000710542735760100185871124267578125 0.00000000003552713678800500929355621337890625 0.000000000017763568394002504646778106689453125 0.0000000000088817841970012523233890533447265625 0.00000000000444089209850062616169452667236328125 0.000000000002220446049250313080847263336181640625 0.0000000000011102230246251565404236316680908203125 0.00000000000055511151231257827021181583404541015625 0.000000000000277555756156289135105907917022705078125 0.0000000000001387778780781445675529539585113525390625 0.00000000000006938893903907228377647697925567626953125 0.000000000000034694469519536141888238489627838134765625 0.0000000000000173472347597680709441192448139190673828125 0.00000000000000867361737988403547205962240695953369140625 0.000000000000004336808689942017736029811203479766845703125 0.0000000000000021684043449710088680149056017398834228515625 0.00000000000000108420217248550443400745280086994171142578125 0.000000000000000542101086242752217003726400434970855712890625 0.0000000000000002710505431213761085018632002174854278564453125 0.00000000000000013552527156068805425093160010874271392822265625 0.000000000000000067762635780344027125465800054371356964111328125 0.0000000000000000338813178901720135627329000271856784820556640625 0.00000000000000001694065894508600678136645001359283924102783203125 0.000000000000000008470329472543003390683225006796419620513916015625 0.0000000000000000042351647362715016953416125033982098102569580078125 0.00000000000000000211758236813575084767080625169910490512847900390625 0.000000000000000001058791184067875423835403125849552452564239501953125 0.0000000000000000005293955920339377119177015629223776262821197509765625 0.00000000000000000026469779601696885595885078146118881314105987548828125 0.000000000000000000132348898008484427979425390730594406570529937744140625 0.0000000000000000000661744490042422139897126953652972032852649688720703125 0.00000000000000000003308722450212110699485634768264860164263248443603515625 0.000000000000000000016543612251060553497428173841324300821316242218017578125 0.0000000000000000000082718061255302767487140869206621504106581211090087890625 0.00000000000000000000413590306276513837435704346033107520532906055450439453125 0.000000000000000000002067951531382569187178521730165537602664530277252197265625 0.0000000000000000000010339757656912845935892608650827688013322651386260986328125 0.00000000000000000000051698788284564229679463043254138440066611256931304931640625 0.000000000000000000000258493941422821148397315216270692200333056284656524658203125 0.0000000000000000000001292469707114105741986576081353461001665281423282623291015625 0.00000000000000000000006462348535570528709932880406767305008326407116413116455078125 0.000000000000000000000032311742677852643549664402033836525041632035582065582275390625 0.0000000000000000000000161558713389263217748322010169182625208160177910327911376953125 0.00000000000000000000000807793566946316088741610050845913126040800889551639556884765625 0.00000000000000000000000403896783473

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Figure 1

1. **RESEARCH DESIGN**

SECRET

J. R. FLECK

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11/11/11

1. The first group of people who are not in the labor force are those who are not in the labor force because they are not in the labor force.

12/11/1964

1.14

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 13
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
-2.75	10.23	.2741	-3.99	7.84	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	MEAN YP	S.D. YP	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-1.03	5.75	-0.02	5.69	.0381	.0945	-.0902	-.61	9.66	.3028	-1.90	7.25
24	-1.13	8.43	-1.07	7.16	.1628	.0080	-.1641	-.67	9.26	.2923	-1.86	6.86
36	-1.17	10.53	-1.09	8.52	.1885	-.0303	-.1979	-.76	8.66	.2908	-1.81	6.43
48	-1.23	11.63	-1.09	9.22	.2226	-.0743	-.2135	-.90	8.31	.2813	-1.78	6.13
60	-1.29	12.58	-1.12	10.21	.2421	-.1084	-.2313	-.97	7.92	.2665	-1.78	5.89
72	-1.38	12.90	-1.13	10.13	.2616	-.1289	-.2462	-1.03	7.75	.2485	-1.79	5.77

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-3.41	8.93	.2518	-4.52	7.09	930

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
	-3.78	-6.01

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.04	5.97	-.3445	-.03	5.17	-.3763	.0081	.0760	-.0967	-.52	8.35	.2914	-1.78	6.53
24	-.09	7.19	-.4176	-.05	6.22	-.4590	.1046	.0603	-.1667	-.49	8.04	.2761	-1.72	6.25
36	-.15	9.05	-.5279	-.07	7.48	-.5493	.1587	.0176	-.2070	-.69	7.51	.2748	-1.63	5.88
48	-.20	9.89	-.5773	-.10	8.11	-.5934	.1926	-.0240	-.2189	-.88	7.23	.2661	-1.60	5.67
60	-.23	10.85	-.6338	-.12	8.69	-.6365	.2093	-.0562	-.2340	-.98	6.85	.2551	-1.56	5.44
72	-.31	11.12	-.6552	-.16	8.96	-.6552	.2309	-.0878	-.2402	-1.10	6.70	.2366	-1.56	5.34

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 13558 - DARE KEMEN
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1956 - 12/75
 NUMBER OF YEARS - 15
 ALPHA VALUE - 0.05

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N
	-4.34	8.57	.2873	-3.31	5.80	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	-2.4	8.54	.2514	-2.19	8.25
24	-1.08	5.21	.1163	-2.15	5.21
36	-1.03	5.09	.1163	-2.15	5.09
48	-1.03	5.09	.1163	-2.15	5.09
60	-1.03	5.09	.1163	-2.15	5.09
72	-1.03	5.09	.1163	-2.15	5.09
84	-1.03	5.09	.1163	-2.15	5.09
96	-1.03	5.09	.1163	-2.15	5.09
108	-1.03	5.09	.1163	-2.15	5.09
120	-1.03	5.09	.1163	-2.15	5.09
132	-1.03	5.09	.1163	-2.15	5.09
144	-1.03	5.09	.1163	-2.15	5.09
156	-1.03	5.09	.1163	-2.15	5.09
168	-1.03	5.09	.1163	-2.15	5.09
180	-1.03	5.09	.1163	-2.15	5.09
192	-1.03	5.09	.1163	-2.15	5.09
204	-1.03	5.09	.1163	-2.15	5.09
216	-1.03	5.09	.1163	-2.15	5.09
228	-1.03	5.09	.1163	-2.15	5.09
240	-1.03	5.09	.1163	-2.15	5.09
252	-1.03	5.09	.1163	-2.15	5.09
264	-1.03	5.09	.1163	-2.15	5.09
276	-1.03	5.09	.1163	-2.15	5.09
288	-1.03	5.09	.1163	-2.15	5.09
300	-1.03	5.09	.1163	-2.15	5.09

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) - 16
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	-0.01	3.97	-0.4235	-2.84	4.23	930	-0.00	3.50	0.391	-5.07	4.80	0.2994	-2.84	4.23	930	-0.00	3.50	0.391	-0.00	3.50
24	-0.04	4.18	-0.4458					3.76	0.865								4.80	0.865		3.76
36	-0.05	5.08	-0.5437					4.80	1.251								4.80	1.251		4.80
48	-0.06	5.41	-0.5753					4.67	1.938								4.67	1.938		4.67
60	-0.08	5.79	-0.6128					5.09	1.986								5.09	1.986		5.09
72	-0.11	6.07	-0.6360					5.07	2.176								5.07	2.176		5.07

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	R (X, YP)	MEAN Y	S.D. Y	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-0.01	4.33	0.3567	-1.58	4.25	0.3567	-5.07	4.33	0.3567	-2.84	4.23	0.3567	-0.01	4.33	0.3567	-1.58	4.25
24	-0.04	4.25	0.3508	-1.45	4.25	0.3508		4.25	0.3508		4.23	0.3508	-0.04	4.25	0.3508	-1.45	4.25
36	-0.05	3.99	0.3737	-1.59	3.99	0.3737		3.99	0.3737		4.23	0.3737	-0.05	3.99	0.3737	-1.59	3.99
48	-0.06	3.89	0.3536	-1.65	3.89	0.3536		3.89	0.3536		4.23	0.3536	-0.06	3.89	0.3536	-1.65	3.89
60	-0.08	3.78	0.3619	-1.76	3.78	0.3619		3.78	0.3619		4.23	0.3619	-0.08	3.78	0.3619	-1.76	3.78
72	-0.11	3.69	0.3612	-1.82	3.69	0.3612		3.69	0.3612		4.23	0.3612	-0.11	3.69	0.3612	-1.82	3.69

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 17
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
12	-6.28	3.66	.2318	-1.98	3.36	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (XP, Y)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.02	3.74	-.5100	.02	3.87	.0037	-.0056	-3.09	3.15	.3250	-.93	2.75
24	-.03	3.43	-.4685	.06	3.47	.0369	-.0474	-2.97	3.23	.2962	-1.32	2.87
36	-.04	4.16	-.5569	.09	4.07	.1103	-.0454	-3.08	3.02	.2997	-1.00	2.68
48	-.05	4.37	-.5905	.11	3.93	.1539	-.0564	-3.10	2.96	.2795	-1.04	2.72
60	-.07	4.60	-.6222	.12	4.33	.1525	-.0849	-3.13	2.87	.2961	-.90	2.55
72	-.08	4.81	-.6556	.15	4.13	.2005	-.1119	-3.12	2.77	.2660	-.91	2.50

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	R (X, Y)
12	-0.02	3.17	-0.5328	.00	3.84	-0.6720	-1.16	2.87	930	.0348
24	-0.02	2.99	-0.5061	.02	3.14	-0.5523				
36	-0.04	3.50	-0.5873	.04	3.95	-0.6822				
48	-0.05	3.66	-0.6133	.03	3.63	-0.6286				
50	-0.09	3.78	-0.6322	.04	4.03	-0.7019				
72	-0.10	3.88	-0.6511	.03	3.79	-0.6605				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-4.24	2.51	.0981	-1.44	2.12
24	-4.03	2.55	.0785	-1.41	2.37
36	-4.22	2.40	.0779	-1.67	2.09
48	-4.22	2.34	.0725	-1.68	2.22
50	-4.29	2.30	.0772	-1.52	2.04
72	-4.30	2.25	.0876	-1.50	2.15

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12852 - CAPE KENNEDY
 MONTH OF OBS. - JULY
 PERIOD OF OBS. - 1/56 - 12/70
 NUMBER OF OBS. - 13
 ALPHA ANGLE - 90.0

$X = U(1AT T)$
 $Y = V(1AT T)$
 $XP = U(1AT T + DT) - U(1AT T)$
 $YP = V(1AT T + DT) - V(1AT T)$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT	-10.63	2.86	.1350	-1.1	2.85	930	-5.27	2.23	.0220	-1.3	1.78
12	-10.63	2.86	.1350	-1.1	2.85	930	-5.27	2.23	.0220	-1.3	1.78
24	-10.63	2.86	.1350	-1.1	2.85	930	-5.27	2.23	.0220	-1.3	1.78
36	-10.63	2.86	.1350	-1.1	2.85	930	-5.27	2.23	.0220	-1.3	1.78
48	-10.63	2.86	.1350	-1.1	2.85	930	-5.27	2.23	.0220	-1.3	1.78
60	-10.63	2.86	.1350	-1.1	2.85	930	-5.27	2.23	.0220	-1.3	1.78
72	-10.63	2.86	.1350	-1.1	2.85	930	-5.27	2.23	.0220	-1.3	1.78

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	-5.27	2.23	.0220	-1.3	1.78
12	-5.27	2.23	.0220	-1.3	1.78
24	-5.27	2.23	.0220	-1.3	1.78
36	-5.27	2.23	.0220	-1.3	1.78
48	-5.27	2.23	.0220	-1.3	1.78
60	-5.27	2.23	.0220	-1.3	1.78
72	-5.27	2.23	.0220	-1.3	1.78

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	R (XP, Y)	R (YP, Y)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43
24	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43
36	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43
48	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43
60	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43
72	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43	.0679	-81	2.39	930	-13.01	3.43

STATION (12368) - CAPE KENNEDY
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 22
ALPHA ANGLE - 90.0

X	U	T
Y	V	T

$$\begin{aligned} \mathcal{U}^3 &= U(\mathcal{A}) \cap \mathcal{U}^2 &= U(\mathcal{A}) \cap \mathcal{U}^1 &= U(\mathcal{A}) \cap \mathcal{U}^0 \\ \mathcal{V}^3 &= V(\mathcal{A}) \cap \mathcal{V}^2 &= V(\mathcal{A}) \cap \mathcal{V}^1 &= V(\mathcal{A}) \cap \mathcal{V}^0 \end{aligned}$$

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112831 - CAPE KENEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1956 - 1960
 NUMBER OF OBS. - 23
 ALPHA VALUE - .05
 ALPHA VALUE - .05

X = U1AT T)
 Y = V1AT T)
 XP = U1AT T + DT) - U1AT T)
 YP = V1AT T + DT) - V1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N
	-17.56	3.32	-.0141	-23	3.03	332
	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	N
DT	-1.03	2.70	-.0009	-8.96	2.76	332
12	-1.08	2.59	-.0009	-8.76	2.78	332
24	-1.11	2.53	-.0009	-8.53	2.67	332
36	-1.14	2.49	-.0009	-8.73	2.53	332
48	-1.17	2.43	-.0009	-8.78	2.58	332
60	-1.20	2.37	-.0009	-8.72	2.55	332
72	-1.20	2.37	-.0009	-8.72	2.55	332

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
	-17.53	3.32	-.0141	-23	3.03
DT	-1.03	2.70	-.0009	-8.96	2.76
12	-1.08	2.59	-.0009	-8.76	2.78
24	-1.11	2.53	-.0009	-8.53	2.67
36	-1.14	2.49	-.0009	-8.73	2.53
48	-1.17	2.43	-.0009	-8.78	2.58
60	-1.20	2.37	-.0009	-8.72	2.55
72	-1.20	2.37	-.0009	-8.72	2.55

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-18.66	3.50	-.0258	-.27	2.81	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.04	4.06	-.5809	.02	4.11	-.7365	.0342	-.0068	-9.37	2.85	-.0685	.05	1.90
24	-.09	3.91	-.5647	.04	3.59	-.6443	-.0446	.0592	-9.34	2.89	-.0128	.39	2.14
36	-.14	4.18	-.6018	.02	4.13	-.7182	.0257	-.0488	-9.35	2.79	-.0733	.27	1.95
48	-.18	4.13	-.6014	.01	3.57	-.6232	-.0979	.0867	-9.32	2.79	.0108	.34	2.19
60	-.23	4.53	-.6600	-.01	4.15	-.7294	.0214	.0070	-9.28	2.63	-.0686	.13	1.92
72	-.27	4.36	-.6462	-.02	3.75	-.6585	-.1050	.0710	-9.17	2.67	.0298	-.05	2.11

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
	-19.44	3.82	.0182	-.52	2.70	930								
12	-.04	4.32	-.5678	-.6894	.1083		-.6894	3.73	-.0658	-.972	3.15	-.0379	-.33	1.96
24	-.09	4.01	-.5312	-.6779	-.0119		-.6779	3.65	-.0325	-.968	3.24	-.0402	-.29	1.98
36	-.14	4.58	-.6034	-.6853	.0675		-.6853	3.82	-.1186	-.963	3.02	-.0221	.58	1.95
48	-.20	4.33	-.5824	-.6849	-.0542		-.6849	3.71	-.0239	-.962	3.10	.0593	.46	2.01
60	-.25	4.80	-.6474	-.6920	.0196		-.6920	3.67	-.0490	-.958	2.91	.0179	.12	1.94
72	-.31	4.58	-.6262	-.6801	-.0192		-.6801	3.79	.0094	-.948	2.98	.0562	-.21	1.98

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12859 - CAPE KENNEDY
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 26
 ALPHA ANGLE - 30.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
D.F.	H.F.	MEAN		S.D.	X	P		S.D.	Y	N	GIVEN		S.D.	XP	R		S.D.	YP	S.D.
		XP	Y			(X, Y)	(Y, YP)				X	Y			(XP, YP)	(YP, X)			
12	24	-20.08	-60	4.35	-0.0354	-0.60	-0.60	2.98	930	-19.98	-0.66	-19.98	3.72	-0.813	-0.01	-0.01	3.71	-0.01	2.09
24	36	-0.09	-0.04	4.29	3.35	-0.6837	-0.6837	-0.1398	0.652	0.0512	-10.12	-9.62	3.71	-0.0587	-0.01	-0.01	3.46	-0.01	2.10
36	48	-0.15	-0.05	5.03	3.98	-0.6800	-0.6800	-0.1302	0.734	0.0898	-9.83	-9.76	3.47	-0.0588	-0.01	-0.01	3.47	-0.01	2.11
48	60	-0.21	-0.07	4.94	4.05	-0.6960	-0.6960	-0.1425	0.443	0.1326	-9.74	-9.74	3.31	-0.0469	-0.01	-0.01	3.31	-0.01	2.06
60	72	-0.26	-0.01	5.35	4.13	-0.7100	-0.7100	-0.1592	0.958	0.1243	-9.68	-9.68	3.35	-0.0172	-0.01	-0.01	3.35	-0.01	2.03
72		-0.30	-0.01	5.23	4.19	-0.7225	-0.7225	-0.1159	0.764	0.0880	-9.68	-9.68	3.35	-0.0516	-0.01	-0.01	3.35	-0.01	1.99

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 120° W OF RECORD - JULY
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (100) - 27
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-20.43	4.70	-.0384	-.80	3.09	930											
24																	
36																	
48																	
60																	
72																	

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12858) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
7	1/56 - 12/70	0	90.0	-60	2.29	-.1376	1.48	1.84	930
7	1/56 - 12/70	1	90.0	-79	4.40	-.0129	2.73	3.31	930
7	1/56 - 12/70	2	90.0	1.18	4.45	.0981	1.85	3.45	930
7	1/56 - 12/70	3	90.0	1.35	4.55	.1239	1.82	3.51	930
7	1/56 - 12/70	4	90.0	1.36	4.79	.1173	1.45	3.77	930
7	1/56 - 12/70	5	90.0	1.16	4.86	.0779	1.10	3.86	930
7	1/56 - 12/70	6	90.0	.81	4.93	.0539	.76	4.14	930
7	1/56 - 12/70	7	90.0	.28	5.01	.0897	.37	4.36	930
7	1/56 - 12/70	8	90.0	-10	5.55	.1673	-.10	4.72	930
7	1/56 - 12/70	9	90.0	-66	6.49	.2715	-.61	5.39	930
7	1/56 - 12/70	10	90.0	-1.01	7.44	.3200	-1.21	6.11	930
7	1/56 - 12/70	11	90.0	-1.47	8.67	.3326	-1.92	6.80	930
7	1/56 - 12/70	12	90.0	-2.06	9.74	.3124	-2.84	7.43	930
7	1/56 - 12/70	13	90.0	-2.75	10.28	.2741	-3.99	7.84	930
7	1/56 - 12/70	14	90.0	-3.41	8.93	.2518	-4.52	7.09	930
7	1/56 - 12/70	15	90.0	-4.34	6.57	.2673	-3.91	5.60	930
7	1/56 - 12/70	16	90.0	-5.07	4.80	.2954	-2.84	4.23	930
7	1/56 - 12/70	17	90.0	-6.28	3.66	.2318	-1.98	3.36	930
7	1/56 - 12/70	18	90.0	-8.39	2.97	.0348	-.16	2.67	930
7	1/56 - 12/70	19	90.0	-10.63	2.86	.1350	-.97	2.65	930
7	1/56 - 12/70	20	90.0	-13.01	3.43	.0679	-.81	2.39	930
7	1/56 - 12/70	21	90.0	-14.94	3.51	-.2009	-.52	2.72	930
7	1/56 - 12/70	22	90.0	-16.42	3.27	-.1696	-.30	3.13	930
7	1/56 - 12/70	23	90.0	-17.56	3.32	-.0141	-.23	3.09	930
7	1/56 - 12/70	24	90.0	-18.66	3.50	-.0258	-.27	2.81	930
7	1/56 - 12/70	25	90.0	-19.44	3.82	-.0182	-.52	2.61	930
7	1/56 - 12/70	26	90.0	-20.08	4.35	-.0864	-.60	2.70	930
7	1/56 - 12/70	27	90.0	-20.49	4.70	-.0364	-.80	2.88	930
7	1/56 - 12/70	27	90.0					3.09	930

STATION (12868)	-	CAPE KENNEDY	X = U(AT T)
MONTH OF RECORD	-	AUGUST	Y = V(AT T)
PERIOD OF RECORD	-	1/56 - 12/70	X ⁰ = U(AT T)
ALTITUDE (KM)	-	0	Y ⁰ = V(AT T)
ALPHA ANGLE	-	90.0	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X.Y.XP.YP

	MEAN X	S.D. Y	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y				
	-.58	2.14	.0388	.69	1.99	930	-.57	.66				

STATION (12368)	- CAPE KENNEDY
MONTH OF RECORD	- AUGUST
PERIOD OF RECORD	- 1/56 - 12/70
ALTITUDE (KM)	- 1
ALPHA ANGLE	- 90.0

$$\begin{array}{l} X = U(AT) \\ Y = V(AT) \end{array} \quad \begin{array}{l} X^2 = U(AT)T \\ Y^2 = V(AT)T \end{array}$$

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.07	3.13	-.3635	1.52	3.63	930	-.02	2.99	.1408	.11	3.30
24	-.11	3.82	-.4431				-.03	3.41	.2386	.13	3.20
36	-.15	4.57	-.5244				-.06	4.26	.2020	.14	2.92
48	-.21	5.01	-.5717				-.10	4.48	.2596	.14	2.83
60	-.27	5.39	-.6140				-.12	4.88	.2374	.12	2.65
72	-.33	5.66	-.6443				-.15	4.93	.2769	.11	2.61

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
.65	1.35

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (128681) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	-.05	3.09	-.3393	-.01	2.92	.2294	1.39	3.72	930	.22	4.40	-.0158	.82	3.42
24	-.10	3.68	-.4266	-.02	3.98					.25	4.23	-.0772	.78	3.25
36	-.13	4.57	-.5029	-.03	4.31					.26	4.05	-.1213	.75	3.01
48	-.18	5.12	-.5628	-.06	4.64					.26	3.87	-.1776	.73	2.88
60	-.22	5.59	-.6107	-.09	5.00					.25	3.70	-.2053	.70	2.72
72	-.26	5.90	-.6431	-.12	5.08					.25	3.58	-.2426	.68	2.66

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 Y
 .87 1.22

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1128681) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
	.91	4.83	.2555	1.43	3.83	930								
12	-.05	3.32	-.3484	-.01	3.03		-.3956	.1936	-.0290	-.1122	.30	.452	.2847	3.51
24	-.08	4.06	-.4245	.01	3.73		-.4933	.2067	-.0747	-.1157	.32	.437	.2668	3.33
36	-.10	4.63	-.4842	.00	4.45		-.5865	.2265	-.1392	-.1110	.35	.422	.2644	3.10
48	-.13	5.13	-.5404	.00	4.89		-.6467	.2636	-.2114	-.1151	.37	.406	.2477	2.91
60	-.16	5.61	-.5902	-.03	5.18		-.6852	.2901	-.2460	-.1365	.36	.389	.2281	2.78
72	-.21	5.98	-.6280	-.05	5.32		-.7034	.2921	-.2619	-.1399	.35	.375	.2197	2.71

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 .99
 1.32

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN		S.D.		R		MEAN		S.D.		R		N		GIVEN		GIVEN		S.D.		MEAN		S.D.	
	XP	X	XP	X	(X,XP)	(X,Y)	YP	Y	(Y,YP)	(XP,YP)	R	(YP,X)	(YP,Y)		X	Y	XP	YP	XP	Y	XP	YP		
12	-.04	3.43	-.3458	-.01	3.39	-.4083	-.01	3.39	-.4083	.0926	.0046	-.0712	930	1.02	1.15	1.02	1.15	4.74	.2700	.69	3.77	4.74	.2700	
24	-.08	4.09	-.4063	-.01	4.11	-.4953	-.01	4.11	-.4953	.2163	-.0793	-.1123						4.62	.2533	.67	3.59	4.62	.2533	
36	-.11	4.95	-.4948	-.01	5.02	-.6087	-.01	5.02	-.6087	.2130	-.1393	-.1049						4.39	.2563	.63	3.28	4.39	.2563	
48	-.13	5.43	-.5445	-.02	5.39	-.6550	-.02	5.39	-.6550	.2682	-.2160	-.1206						4.24	.2283	.61	3.12	4.24	.2283	
60	-.17	5.94	-.5950	-.04	5.73	-.6973	-.04	5.73	-.6973	.2774	-.2446	-.1312						4.06	.2141	.59	2.95	4.06	.2141	
72	-.20	6.29	-.6335	-.06	5.82	-.7082	-.06	5.82	-.7082	.2736	-.2584	-.1287						3.90	.2071	.57	2.90	3.90	.2071	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 6
 ALPHA ANGLE - 90.0

X - U(IAT T)
 Y - V(IAT T)
 XP - U(IAT T + DT) - U(IAT T)
 YP - V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	.61	5.16	.2881	.82	4.37	930								
12	-.03	3.63	-.753	.01	3.35	-.3817	.1122	.0120	-.0922	.22	4.83	.3142	.53	4.03
24	-.04	4.47	-.421	.03	4.42	-.5047	.1774	-.0402	-.1257	.23	4.66	.3149	.52	3.77
36	-.05	5.36	-.5142	.01	5.28	-.6049	.2389	-.1304	-.1480	.24	4.42	.3013	.49	3.48
48	-.07	5.85	-.5630	.01	5.74	-.6582	.2860	-.2063	-.1564	.24	4.26	.2812	.47	3.29
60	-.10	6.30	-.6084	.00	6.04	-.6938	.3080	-.2636	-.1594	.24	4.09	.2622	.46	3.14
72	-.11	6.62	-.6428	.02	6.20	-.7122	.3136	-.2872	-.1591	.24	3.94	.2486	.46	3.06

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 7
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT MC	QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	P (X,XP)	R (X,Y)	MEAN Y	S.D. Y	N	
12	.24	5.24	.3124	.52	4.71	.930		
24								
36								
48								
60								
72								
	QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	P (X,XP)	R (Y,YP)	MEAN YP	S.D. YP	N	
12	.03	3.70	-.3421	-.3958	.1448	.0236		
24	.00	4.58	-.4255	-.5118	.1844	-.0136		
36	-.01	5.34	-.5193	-.6082	.2427	-.0958		
48	-.01	6.07	-.5720	-.6815	.2821	-.1813		
60	-.02	6.52	-.6172	-.6860	.3168	-.2317		
72	-.01	6.80	-.6467	-.7051	.3317	-.2717		
	QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	P (X,XP)	R (Y,YP)	MEAN YP	S.D. YP	N	
12	.05	4.91	.3395	.36	.05	4.31		
24	.05	4.72	.3480	.35	.05	4.03		
36	.06	4.47	.3419	.34	.06	3.73		
48	.07	4.29	.3295	.33	.07	3.54		
60	.07	4.12	.3015	.33	.07	3.43		
72	.07	3.99	.2843	.31	.07	3.33		

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STATION (1238)	- CAPE VERDE
MONTH OF RECORD	- AUGUST
PERIOD OF RECORD	- 1/55 - 12/70
ALTITUDE (KM)	- 8
ALPHA ANGLE	- 50 0

$$\begin{aligned} X &= U(AT) \\ Y &= V(AT) \end{aligned} \quad \begin{aligned} XP &= U(AT) \\ YP &= V(AT) \end{aligned}$$
$$\begin{aligned} \dot{X}P &= U(AT)T + DT) - U(AT)T) \\ \dot{Y}P &= V(AT)T + DT) - V(AT)T) \end{aligned}$$

QUADRIVARIATE FEDERAL STATISTICS OF Y.Y.XP.YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
- .10	5.44	.277	-.06	5.03	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

MEAN X _P	GIVEN X	GIVEN Y	R	S.D. X _P	S.D. Y _P
-.09			.3107	5.10	4.62
-.06			.3198	4.88	4.36
-.06			.3227	4.64	4.04
-.07			.3091	4.48	3.85
-.07			.2796	4.33	3.71
-.07			.2590	4.22	3.62
	.03	-.18			
				MEAN Y _P	S.D. Y _P
				.04	4.62
				.05	4.36
				.06	4.04
				.07	3.85
				.07	3.71
				.09	3.62

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 9
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP											
C R	MEAN		S.D.		R		MEAN		S.D.		N	GIVEN		GIVEN		S.D.	MEAN	R	S.D.	MEAN	S.D.
	X	Y	X	Y	(X,Y)	(X,Y)	X	Y	X	Y		X	Y	XP	YP						
12	.02	-.35	5.88	.3071	.3071	.3071	-.47	5.61	5.61	930					-.22	-.56					
24	.02																				
36	.04																				
48	.09																				
60	.14																				
72	.14																				

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 10
ALPHA ANGLE - 90.0

$$\begin{array}{l} X \\ Y \end{array} = \begin{array}{l} U(AT) \\ V(AT) \end{array} \quad \begin{array}{l} X^p \\ Y^p \end{array} = \begin{array}{l} U(AT) \\ V(AT) \end{array}$$

QUADRAVARIATE NORMAL STATISTICS OF X.Y.XP.YP

OT	MEAN X _P	S.D. X _P	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. X _P	MEAN Y _P	S.D. Y _P
12	-.43	6.66	.3048	-.98	8.72	930	-.29	-1.05			
11	.03	4.87	.00	-.3623	.1504		6.20	.4001	6.24	-.48	6.24
10	.06	4.99	.05	-.4745	.1943		5.93	.4143	5.99	-.43	5.99
9	.12	7.09	.08	-.5615	.2135		5.67	.4317	5.95	-.41	5.95
8	.18	7.63	.05	-.6227	.2564		5.19	.4269	5.26	-.41	5.26
7	.27	8.14	.10	-.6571	.3020		5.30	.4094	5.07	-.39	5.07
6	.31	8.38	.15	-.6766	.3329		5.20	.3681	4.95	-.35	4.95

STATION	05601
MONTH OF RECORD	12/60
PERIOD OF RECORD	1/56 - 12/60
ALTITUDE (M)	12
ALPHA ANGLE	90.1

[illegible]
$$\begin{aligned} x_F &= U(A) \cdot T \cdot DT; & - & U(AT \cdot T) \\ y_F &= V(A) \cdot T \cdot DT; & - & V(AT \cdot T) \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X,Y,Z,P.

D. No.	MEAN		S.D.		P (X,Y)	MEAN		S.D.		P (X,Y)	N
	X	Y	X	Y		X _P	Y _P	X _P	Y _P		
12	-	-	8.53	-	34.50	-2.04	8.38	930			
13	12	12	6.12	7.31	5.84	5.84	5.84	5.84	.1531	.0147	
14	13	13	7.31	8.53	7.43	7.43	7.43	7.43	.1940	.0079	
15	14	14	8.53	9.75	8.98	8.98	8.98	8.98	.2195	.0606	
16	15	15	9.75	10.97	10.00	10.00	10.00	10.00	.2330	.0871	
17	16	16	10.97	12.19	10.80	10.80	10.80	10.80	.2704	.1435	
18	17	17	12.19	13.41	11.28	11.28	11.28	11.28	.2940	.1746	
19	18	18	13.41	14.63	12.21	12.21	12.21	12.21			
20	19	19	14.63	15.85	13.41	13.41	13.41	13.41			
21	20	20	15.85	17.07	14.63	14.63	14.63	14.63			
22	21	21	17.07	18.29	15.85	15.85	15.85	15.85			
23	22	22	18.29	19.51	17.07	17.07	17.07	17.07			
24	23	23	19.51	20.73	18.29	18.29	18.29	18.29			
25	24	24	20.73	21.95	19.51	19.51	19.51	19.51			
26	25	25	21.95	23.17	20.73	20.73	20.73	20.73			
27	26	26	23.17	24.39	21.95	21.95	21.95	21.95			
28	27	27	24.39	25.61	23.17	23.17	23.17	23.17			
29	28	28	25.61	26.83	24.39	24.39	24.39	24.39			
30	29	29	26.83	28.05	25.61	25.61	25.61	25.61			
31	30	30	28.05	29.27	26.83	26.83	26.83	26.83			
32	31	31	29.27	30.49	28.05	28.05	28.05	28.05			
33	32	32	30.49	31.71	29.27	29.27	29.27	29.27			
34	33	33	31.71	32.93	30.49	30.49	30.49	30.49			
35	34	34	32.93	34.15	31.71	31.71	31.71	31.71			
36	35	35	34.15	35.37	32.93	32.93	32.93	32.93			
37	36	36	35.37	36.59	34.15	34.15	34.15	34.15			
38	37	37	36.59	37.81	35.37	35.37	35.37	35.37			
39	38	38	37.81	39.03	36.59	36.59	36.59	36.59			
40	39	39	39.03	40.25	37.81	37.81	37.81	37.81			
41	40	40	40.25	41.47	39.03	39.03	39.03	39.03			
42	41	41	41.47	42.69	40.25	40.25	40.25	40.25			
43	42	42	42.69	43.91	41.47	41.47	41.47	41.47			
44	43	43	43.91	45.13	42.69	42.69	42.69	42.69			
45	44	44	45.13	46.35	43.91	43.91	43.91	43.91			
46	45	45	46.35	47.57	45.13	45.13	45.13	45.13			
47	46	46	47.57	48.79	46.35	46.35	46.35	46.35			
48	47	47	48.79	50.01	47.57	47.57	47.57	47.57			
49	48	48	50.01	51.23	48.79	48.79	48.79	48.79			
50	49	49	51.23	52.45	50.01	50.01	50.01	50.01			
51	50	50	52.45	53.67	51.23	51.23	51.23	51.23			
52	51	51	53.67	54.89	52.45	52.45	52.45	52.45			
53	52	52	54.89	56.11	53.67	53.67	53.67	53.67			
54	53	53	56.11	57.33	54.89	54.89	54.89	54.89			
55	54	54	57.33	58.55	56.11	56.11	56.11	56.11			
56	55	55	58.55	59.77	57.33	57.33	57.33	57.33			
57	56	56	59.77	60.99	58.55	58.55	58.55	58.55			
58	57	57	60.99	62.21	59.77	59.77	59.77	59.77			
59	58	58	62.21	63.43	60.99	60.99	60.99	60.99			
60	59	59	63.43	64.65	62.21	62.21	62.21	62.21			
61	60	60	64.65	65.87	63.43	63.43	63.43	63.43			
62	61	61	65.87	67.09	64.65	64.65	64.65	64.65			
63	62	62	67.09	68.31	65.87	65.87	65.87	65.87			
64	63	63	68.31	69.53	67.09	67.09	67.09	67.09			
65	64	64	69.53	70.75	68.31	68.31	68.31	68.31			
66	65	65	70.75	71.97	69.53	69.53	69.53	69.53			
67	66	66	71.97	73.19	70.75	70.75	70.75	70.75			
68	67	67	73.19	74.41	71.97	71.97	71.97	71.97			
69	68	68	74.41	75.63	73.19	73.19	73.19	73.19			
70	69	69	75.63	76.85	74.41	74.41	74.41	74.41			
71	70	70	76.85	78.07	75.63	75.63	75.63	75.63			
72	71	71	78.07	79.29	76.85	76.85	76.85	76.85			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	S.D. X _P	R (X _P , Y _P)	MEAN Y _P	S.D. Y _P
- .71	-2.08	7.93	.3796	-1.06	7.89
		7.57	.3918	-1.04	7.51
		7.29	.4072	-1.00	7.09
		7.14	.4139	-1.00	6.74
		6.81	.4026	-.95	6.44
		6.72	.3975	-.91	6.23

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112282 - CAPE KENNEY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/58 - 12/78
 ALPHA - .05
 ALPHA ANGLE - 90.0

X = U(1, T)
 Y = V(1, T)
 XP = U(1, T) + DT
 YP = V(1, T) + DT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	P (X, Y)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT	-1.01	8.75	.3332	-2.36	8.53	930													
12	.11	6.23	.3527	-3.98	5.57	.0267	.1175	.1175	.1175	.1175	.1175	.1175	.1175	.1175	.1175	.1175	.1175	.1175	.1175
24	.17	7.12	.4094	-4.12	7.14	.0440	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438
36	.24	8.93	.4532	-4.57	8.87	.0813	.2002	.2002	.2002	.2002	.2002	.2002	.2002	.2002	.2002	.2002	.2002	.2002	.2002
48	.37	9.34	.5053	-5.77	9.92	.1593	.2850	.2850	.2850	.2850	.2850	.2850	.2850	.2850	.2850	.2850	.2850	.2850	.2850
60	.49	10.25	.5938	-6.22	10.71	.2878	.2722	.2722	.2722	.2722	.2722	.2722	.2722	.2722	.2722	.2722	.2722	.2722	.2722
72	.80	10.45	.610	-6.587	11.30	.4375	.2754	.2754	.2754	.2754	.2754	.2754	.2754	.2754	.2754	.2754	.2754	.2754	.2754

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT											
12											
24											
36											
48											
60											
72											

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112858) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N
12	.08	4.97	-.3147	.04	5.17	-.3453	-3.34	7.33	930
24	.14	6.10	-.3811	.07	6.18	-.4155			
36	.24	7.59	-.4729	.13	7.55	-.5080			
48	.37	8.25	-.5145	.14	8.36	-.5597			
60	.46	9.09	-.5694	.19	9.09	-.6086			
72	.56	9.33	-.5900	.25	9.46	-.6359			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)
12	-.58	7.46	.3962	-1.80	6.85	-.1166
24	-.53	7.26	.4101	-1.77	6.82	-.1500
36	-.60	6.92	.4184	-1.69	6.27	-.1813
48	-.61	6.74	.4192	-1.67	6.04	-.1914
60	-.61	6.47	.4210	-1.63	5.79	-.2104
72	-.58	6.36	.4124	-1.59	5.64	-.2231

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 15
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.06	4.27	-.3392	8.23	.3338	-2.59	5.23	930	-1.29	5.85	.3897	-1.50	4.84
24	.12	4.73	-.3757						-1.19	5.76	.3956	-1.54	4.78
36	.19	5.95	-.4671						-1.28	5.50	.4190	-1.42	4.95
48	.30	6.41	-.4999						-1.23	5.39	.4255	-1.41	4.94
60	.39	7.08	-.5539						-1.19	5.18	.4312	-1.38	4.24
72	.49	7.33	-.5814						-1.10	5.05	.4246	-1.37	4.18

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
-2.42	-2.53

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 16
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X				MEAN Y				MEAN XP				MEAN YP			
	S.D.	R	(X, Y)	S.D.	S.D.	R	(Y, YP)	S.D.	S.D.	R	(XP, Y)	S.D.	S.D.	R	(XP, YP)	S.D.
12	3.89	4.52	.3323	-1.75	3.86	930										
24																
36																
48																
60																
72																

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12839) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (HGT) - 17
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	S.D. YP	MEAN YP	R (XP, YP)	S.D. YP
12	.05	3.42	-.4682	3.61	.2055	-1.17	3.14	930	-3.08	3.19	.3374	2.59	-.67	.3374	2.59
24	.09	3.25	-.4332						-3.05	3.25	.2883	2.69	-1.02	.2883	2.69
36	.12	3.84	-.5071						-3.10	3.11	.3227	2.53	-.82	.3227	2.53
48	.16	3.91	-.5186						-3.06	3.09	.2963	2.52	-.90	.2963	2.52
60	.22	4.35	-.5668						-3.11	2.97	.3073	2.43	-.65	.3073	2.43
72	.24	4.38	-.5701						-3.09	2.97	.3083	2.40	-.70	.3083	2.40

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-5.67	3.14	.0722	-1.17	3.14	.0722	-3.08	3.19	.3374	2.59	2.59
24			-.0172			-.0172	-3.05	3.25	.2883	2.69	2.69
36			.0070			.0070	-3.10	3.11	.3227	2.53	2.53
48			-.0458			-.0458	-3.06	3.09	.2963	2.52	2.52
60			-.0110			-.0110	-3.11	2.97	.3073	2.43	2.43
72			-.0242			-.0242	-3.09	2.97	.3083	2.40	2.40

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (X11) - 18
 ALPHA ANGLE - 99.0

$$X = U(AT \ T)$$

$$Y = V(AT \ T)$$

$$XP = U(AT \ T + DT) - U(AT \ T)$$

$$YP = V(AT \ T + DT) - V(AT \ T)$$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-8.08	3.04	.0699	-.80	2.83	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	-7.90	-.63

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.04	3.07	-.5045	-.02	3.90	-.6860	-.1373	.0787	.0809	-.4.13	2.62	.1872	-.38	2.06
24	.07	2.77	-.4418	-.01	3.16	-.9502	-.0297	.0894	-.0368	-.4.18	2.72	.1101	-1.09	2.35
36	.12	3.32	-.5252	-.02	3.94	-.6968	-.0899	.0822	.0429	-.4.22	2.59	.1803	-.63	2.03
48	.17	3.28	-.5126	.01	3.50	-.6192	.0023	.0610	-.0417	-.4.22	2.61	.1133	-.92	2.21
60	.23	3.61	-.5638	.01	4.01	-.7091	-.0460	.0516	.0208	-.4.22	2.51	.1637	-.60	1.99
72	.27	3.84	-.5655	.04	3.63	-.8471	.0391	.0284	-.0633	-.4.21	2.50	.0945	-.80	2.15

STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KH) - 19
ALPHA ANGLE - 90.0

$$\begin{array}{l} X = U(AT) \\ Y = V(AT) \end{array} \quad \begin{array}{l} X^P = U(AT) \\ Y^P = V(AT) \end{array}$$
$$\begin{aligned} \dot{X}P &= U(AT)T + DT) - U(AT)T) \\ \dot{Y}P &= V(AT)T + DT) - V(AT)T) \end{aligned}$$

QUADRAVARIATE NORMAL STATISTICS OF X.Y.XP.YP

MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
-10.58	3.07	.1785	-.64	2.58	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

OT HR	MEAN X _P	S.D. X _P	R (X, X _P)	MEAN Y _P	S.D. Y _P	R (Y, Y _P)	R (X _P , Y _P)	R (Y _P , X _P)	MEAN X _P	S.L. X _P	R (X _P , Y _P)	MEAN Y _P	S.D. Y _P
12	.03	3.58	-.5745	-.03	3.87	-.7500	-.2358	-.1215	-5.39	2.52	.1316	-.15	1.70
24	.08	2.89	-.4601	-.00	2.93	-.5708	-.0375	-.0342	-5.27	2.72	.2442	-.74	2.11
36	.12	3.79	-.2291	.02	3.91	-.7670	-.1649	-.1623	-5.42	2.44	.1187	-.43	1.65
48	.19	3.17	-.5045	.03	3.05	-.6279	-.0052	-.0390	-5.35	2.65	.2474	.34	2.01
60	.22	3.91	-.6277	.03	3.86	-.7642	.2325	-.1570	-5.37	2.59	.1007	-.42	1.68
72	.27	3.48	-.5568	.04	3.19	-.6373	-.0193	-.0435	-5.30	2.55	.2316	-.30	1.99

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STATION (12968) - CAPE KENNEDY
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (M) - 20
ALPHA ANGLE - 90.0

X - U1AT T)
Y - VIAT T)
XP - U1AT T + DT) - U1AT T)
YP - VIAT T + DT) - VIAT T)

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STATION (12868)	-	CAPE KENNEDY	X = U/IAT T)
MONTH OF RECORD	-	AUGUST	Y = V/IAT T)
PERIOD OF RECORD	-	1/56 - 12/70	XP = U/IAT T)
ALTITUDE (KFT)	-	21	YP = V/IAT T)
ALTITUDE (KFT)	-	90.0	

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 122531 - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 22
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)
 XP = U(1AT T + DT) - U(1AT T)
 YP = V(1AT T + DT) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N
-16.38	3.37	-1.259	-0.22	2.67	930	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.04	4.15	-.6127	.03	4.13	-.7797	-8.32	2.66	.0790	.09	1.67
24	.11	3.39	-.5008	.02	3.02	-.5757	-8.21	2.91	-.1585	.28	2.18
36	.15	4.22	-.6255	.03	4.05	-.7752	-8.29	2.62	.0347	.21	1.68
48	.21	3.78	-.5533	.06	3.24	-.6147	-8.17	2.79	-.1661	.15	2.10
60	.26	4.32	-.6342	.08	4.07	-.7763	-8.28	2.60	.0233	.14	1.68
72	.33	4.02	-.5899	.08	3.26	-.6296	-8.18	2.72	-.1618	-.13	2.07

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12869) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	-17.36	3.38	.0228	-.16	2.91	930	-17.28	-.08
DT HP	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP
	MEAN YP	S.D. YP	R (YP, Y)	P (XP, YP)	R (XP, Y)	R (YP, X)	MEAN YP	S.D. YP
12	.06	3.63	-.5390	.00	4.42	.0625	-8.69	2.84
24	.11	3.63	-.5405	-.02	3.37	-.0102	-8.63	2.84
36	.15	3.87	-.5769	.01	4.39	-.0371	-8.60	2.76
48	.20	3.97	-.5893	.01	3.53	-.0037	-8.60	2.73
60	.26	4.08	-.6034	.04	4.40	-.0182	-8.61	2.69
72	.30	4.19	-.6132	.03	3.59	-.0285	-8.68	2.67

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BI-VARIATE AND CO-CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION NUMBER - 1465
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 24
 ALPHA ANGLE - 90.0

X = U(1, 1)
 Y = V(1, 1)
 XP = U(1, 1) + DT
 YP = V(1, 1) + DT

BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CO-CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	.08	4.10	-18.25	3.84	0.05	-1.17	2.80	-9.26	3.02	.0079	-9.26	3.02	.16	1.92
24	.14	4.05						-9.29	3.04	.0714	-9.29	3.04	.12	2.21
36	.21	4.28						-9.21	2.96	.0273	-9.21	2.96	.11	1.86
48	.27	4.34						-9.26	2.95	.0786	-9.26	2.95	.18	2.14
60	.33	4.59						-9.24	2.85	.0040	-9.24	2.85	.25	1.87
72	.39	4.51						-9.27	2.90	.0684	-9.27	2.90	.00	2.09

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1.56 - 12/70
 ALTITUDE (KMH) - 25
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.07	4.42	-.5745	-.7058	.0845	930	-.36	2.76	-.0303	-.02	3.92	-.0392	-9.70	3.13	-.0995	-.14	1.96
24	.12	4.39	-.5684	-.6451	-.0301					-.01	3.62	-.0390	-9.75	3.15	-.0314	.12	2.11
36	.16	4.73	-.6126	-.7161	.0216					.00	3.89	-.0325	-9.67	3.02	-.0678	-.02	1.93
48	.21	4.66	-.5978	-.6755	-.0553					.03	3.66	-.0667	-9.77	3.06	-.0124	.17	2.03
60	.27	5.02	-.6452	-.7312	.0115					.03	3.95	-.0333	-9.70	2.92	-.0728	-.08	1.88
72	.33	4.90	-.6244	-.6956	-.0617					.02	3.74	-.0496	-9.76	2.98	-.0104	.00	1.98

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12862) - CAPE KENNEDY
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 26
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.03	4.70	-.5607	4.16	-.0616	-.72	2.78	930	-.72	2.78	-.0616	-.72	2.78	-.0616	-.72	2.78
24	.09	4.61	-.5429													
36	.14	5.13	-.6090													
48	.20	4.86	-.5683													
60	.25	5.45	-.6406													
72	.32	5.12	-.5916													

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (CM) - 27
ALPHA ANGLE - 90.0

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
-20.45	4.40	-.0251	-1.09	2.94	930	-20.29	-1.10
MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. XP
.04	4.90	-.5501	.02	3.91	.02	-.0213	3.67
.10	4.89	-.5478	.04	4.00	-.6734	-.0705	3.68
.13	5.37	-.6037	.07	4.20	-.7139	-.0212	3.68
.14	5.10	-.5705	.06	3.83	-.6529	-.0413	3.61
.18	5.64	-.6277	.06	3.96	-.6692	-.0568	3.42
.26	5.49	-.5979	.07	3.94	-.6594	-.0508	3.53
OT HR	S.D. XP	R (XP, X)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. YP
.12	4.90	-.5501	.02	3.91	-.0186	-10.30	1.07
.24	4.89	-.5478	.04	4.00	-.0216	-10.41	.44
.35	5.37	-.6037	.07	4.20	-.0012	-10.39	.05
.48	5.10	-.5705	.06	3.83	.0081	-10.38	.42
.60	5.64	-.6277	.06	3.96	.0049	-10.36	.74
.72	5.49	-.5979	.07	3.94	-.0021	-10.61	.49

BIVARIATE NORMAL STATISTICS OF A.V

STATION (12968) - CAPE FENEDY

1 = 1/10
2 = 1/20
3 = 1/30
4 = 1/40
5 = 1/50
6 = 1/60
7 = 1/70
8 = 1/80
9 = 1/90
10 = 1/100
11 = 1/110
12 = 1/120
13 = 1/130
14 = 1/140
15 = 1/150
16 = 1/160
17 = 1/170
18 = 1/180
19 = 1/190
20 = 1/200
21 = 1/210
22 = 1/220
23 = 1/230
24 = 1/240
25 = 1/250
26 = 1/260
27 = 1/270
28 = 1/280
29 = 1/290
30 = 1/300

MONTH	PER. OF REC.	ALT. IN.	ALPHA DEG.	MEAN	S.D.	P. (A.V.)	MEAN	S.D.	N
1	1/56 - 12/73	1	30	1.00	1.15	0.000	0.00	0.00	0.00
2	1/56 - 12/73	2	30	1.00	1.15	0.000	0.00	0.00	0.00
3	1/56 - 12/73	3	30	1.00	1.15	0.000	0.00	0.00	0.00
4	1/56 - 12/73	4	30	1.00	1.15	0.000	0.00	0.00	0.00
5	1/56 - 12/73	5	30	1.00	1.15	0.000	0.00	0.00	0.00
6	1/56 - 12/73	6	30	1.00	1.15	0.000	0.00	0.00	0.00
7	1/56 - 12/73	7	30	1.00	1.15	0.000	0.00	0.00	0.00
8	1/56 - 12/73	8	30	1.00	1.15	0.000	0.00	0.00	0.00
9	1/56 - 12/73	9	30	1.00	1.15	0.000	0.00	0.00	0.00
10	1/56 - 12/73	10	30	1.00	1.15	0.000	0.00	0.00	0.00
11	1/56 - 12/73	11	30	1.00	1.15	0.000	0.00	0.00	0.00
12	1/56 - 12/73	12	30	1.00	1.15	0.000	0.00	0.00	0.00
13	1/56 - 12/73	13	30	1.00	1.15	0.000	0.00	0.00	0.00
14	1/56 - 12/73	14	30	1.00	1.15	0.000	0.00	0.00	0.00
15	1/56 - 12/73	15	30	1.00	1.15	0.000	0.00	0.00	0.00
16	1/56 - 12/73	16	30	1.00	1.15	0.000	0.00	0.00	0.00
17	1/56 - 12/73	17	30	1.00	1.15	0.000	0.00	0.00	0.00
18	1/56 - 12/73	18	30	1.00	1.15	0.000	0.00	0.00	0.00
19	1/56 - 12/73	19	30	1.00	1.15	0.000	0.00	0.00	0.00
20	1/56 - 12/73	20	30	1.00	1.15	0.000	0.00	0.00	0.00
21	1/56 - 12/73	21	30	1.00	1.15	0.000	0.00	0.00	0.00
22	1/56 - 12/73	22	30	1.00	1.15	0.000	0.00	0.00	0.00
23	1/56 - 12/73	23	30	1.00	1.15	0.000	0.00	0.00	0.00
24	1/56 - 12/73	24	30	1.00	1.15	0.000	0.00	0.00	0.00
25	1/56 - 12/73	25	30	1.00	1.15	0.000	0.00	0.00	0.00
26	1/56 - 12/73	26	30	1.00	1.15	0.000	0.00	0.00	0.00
27	1/56 - 12/73	27	30	1.00	1.15	0.000	0.00	0.00	0.00
28	1/56 - 12/73	28	30	1.00	1.15	0.000	0.00	0.00	0.00
29	1/56 - 12/73	29	30	1.00	1.15	0.000	0.00	0.00	0.00
30	1/56 - 12/73	30	30	1.00	1.15	0.000	0.00	0.00	0.00

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112859) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 0
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	-1.59	2.77	.2344	-.24	2.70	900	-.78	2.42	.0597	-.01	2.47
24									.1352	-.02	2.77
36									.1641	-.03	3.27
48									.1755	-.04	3.44
60									.2017	-.05	3.61
72									.1845	-.05	3.71

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X GIVEN Y	S.D. X GIVEN Y	R (XP, YP)	MEAN Y GIVEN XP	S.D. Y GIVEN XP
12	-.01	2.71	-.4885	-.4553	.0597	-.0656	-1.63	2.42	.2882	-.17	2.40
24	-.02	2.87	-.5181	-.5062	.1352	-.1144		2.37	.2752	-.19	2.32
36	-.03	3.53	-.6378	-.5965	.1641	-.1314		2.13	.2817	-.15	2.17
48	-.04	3.53	-.6331	-.6250	.1755	-.1360		2.15	.2782	-.16	2.11
60	-.04	3.93	-.7067	-.6548	.2017	-.1527		1.95	.2689	-.14	2.04
72	-.05	3.73	-.6553	-.6717	.1845	-.1226	-.28	2.07	.2764	-.13	2.00

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	-2.26	5.65		.2675	.40	4.93	900							
12	-0.00	3.78	-0.3322	-0.02	3.69	-0.923		.0998		-1.31	5.31	.2994	-0.07	4.51
24	-0.02	4.95	-0.4395	-0.01	4.65	-0.656		.1381		-1.30	5.06	.3083	.01	4.29
36	.01	6.08	-0.5395	.01	5.81	-0.5730		.2188		-1.28	4.75	.2996	.07	4.00
48	-0.01	6.75	-0.5998	.02	6.10	-0.6049		.2336		-1.28	4.51	.2976	.11	3.91
60	.00	7.25	-0.6436	.01	6.59	-0.6517		.2604		-1.25	4.32	.2818	.15	3.73
72	-0.01	7.54	-0.6658	.03	6.72	-0.6596		.2848		-1.24	4.22	.2595	.21	3.70

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.02	3.96	-.3277	.00	3.76	-.3896	.42	4.77	900	-.54	5.64	.3215	.10	4.37
24	.03	5.16	-.4284	.03	4.77	-.4903				-.52	5.40	.3263	.14	4.14
36	.07	6.18	-.5148	.06	5.67	-.5794				-.48	5.13	.3232	.17	3.88
48	.09	6.79	-.5696	.10	5.93	-.6012				-.47	4.91	.3088	.20	3.80
60	.11	7.25	-.6070	.10	6.34	-.6413				-.44	4.76	.3082	.22	3.66
72	.13	7.63	-.5361	.11	6.52	-.6557				-.43	4.62	.2943	.24	3.60

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF λ , Y , XP , YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1.56 - 12/70
 ALTITUDE (KHI) - 3
 ALPHA ANGLE - 90.0

$X = U(AT \ T)$
 $Y = V(AT \ T)$
 $XP = U(AT \ T + DT) - U(AT \ T)$
 $YP = V(AT \ T + DT) - V(AT \ T)$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-0.01	6.01	.260E	.52	4.63	900											
24																	
36																	
48																	
60																	
72																	

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 4
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.05	3.95	-.3253	.05	3.47	-.3629	.56	4.62	900	.59	6.01	.2804	.05	3.47	.0341	.19	5.68	.3193	.19	5.68	.3193	.32	4.30
24	.05	5.17	-.4277	.07	4.52	-.4713							.07	4.52	.0879	.22	5.43	.3361	.22	5.43	.3361	.32	4.07
36	.10	6.10	-.5067	.10	5.40	-.5613							.10	5.40	.1197	.23	5.17	.3421	.23	5.17	.3421	.34	3.81
48	.11	6.64	-.5518	.12	5.76	-.5947							.12	5.76	.1639	.24	5.00	.3411	.24	5.00	.3411	.35	3.70
60	.13	7.08	-.5877	.14	5.08	-.6215							.14	5.08	.1985	.24	4.86	.3264	.24	4.86	.3264	.35	3.62
72	.16	7.26	-.6030	.15	6.30	-.6429							.15	6.30	.2204	.26	4.79	.3167	.26	4.79	.3167	.35	3.54

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.05	3.95	-.3253	.05	3.47	-.3629	.56	4.62	900	.59	6.01	.2804	.05	3.47	.0341	.19	5.68	.3193	.19	5.68	.3193	.32	4.30
24	.05	5.17	-.4277	.07	4.52	-.4713							.07	4.52	.0879	.22	5.43	.3361	.22	5.43	.3361	.32	4.07
36	.10	6.10	-.5067	.10	5.40	-.5613							.10	5.40	.1197	.23	5.17	.3421	.23	5.17	.3421	.34	3.81
48	.11	6.64	-.5518	.12	5.76	-.5947							.12	5.76	.1639	.24	5.00	.3411	.24	5.00	.3411	.35	3.70
60	.13	7.08	-.5877	.14	5.08	-.6215							.14	5.08	.1985	.24	4.86	.3264	.24	4.86	.3264	.35	3.62
72	.16	7.26	-.6030	.15	6.30	-.6429							.15	6.30	.2204	.26	4.79	.3167	.26	4.79	.3167	.35	3.54

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.05	3.95	-.3253	.05	3.47	-.3629	.56	4.62	900	.59	6.01	.2804	.05	3.47	.0341	.19	5.68	.3193	.19	5.68	.3193	.32	4.30
24	.05	5.17	-.4277	.07	4.52	-.4713							.07	4.52	.0879	.22	5.43	.3361	.22	5.43	.3361	.32	4.07
36	.10	6.10	-.5067	.10	5.40	-.5613							.10	5.40	.1197	.23	5.17	.3421	.23	5.17	.3421	.34	3.81
48	.11	6.64	-.5518	.12	5.76	-.5947							.12	5.76	.1639	.24	5.00	.3411	.24	5.00	.3411	.35	3.70
60	.13	7.08	-.5877	.14	5.08	-.6215							.14	5.08	.1985	.24	4.86	.3264	.24	4.86	.3264	.35	3.62
72	.16	7.26	-.6030	.15	6.30	-.6429							.15	6.30	.2204	.26	4.79	.3167	.26	4.79	.3167	.35	3.54

STATION: 12255' - CASE KENNEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1955 - 12/70
ALTITUDE (M) - 5
ALPHA ANGLE - 30.0

$$\begin{aligned} X &= U(AT) \\ Y &= V(AT) \\ X_P &= U(AT) \\ Y_P &= V(AT) \end{aligned}$$
$$\begin{aligned} \dot{x}_P &= \dot{L}(AT) + DT - U(AT) \\ \dot{y}_P &= \dot{V}(AT) + DT - V(AT) \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X _Y	S.D. X _Y	R (X,Y)	MEAN Y _P	S.D. Y _P	R (X,Y)	MEAN Y	S.D. Y	N
12	.08	3.86	-.3033	.06	3.75	-.3711	.39	4.89	900
24	.13	5.17	-.4105	.10	4.67	-.4592			
36	.16	6.19	-.4914	.14	5.63	-.5503			
48	.19	6.74	-.5351	.16	6.14	-.5983			
60	.22	7.17	-.5761	.20	6.46	-.6204			
72	.27	7.38	-.5336	.21	5.70	-.6406			

CONDITIONAL BIVARIATE NORMAL STATISTICS

MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
.38	5.91	.3497	.29	4.53
.42	5.65	.3570	.28	4.33
.44	5.40	.3633	.28	4.07
.45	5.24	.3639	.28	3.91
.47	5.10	.3714	.29	3.83
.50	5.02	.3768	.29	3.75

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12089 - CAPE WENDEY
 MONTH OF OBSERV - SEPTEMBER
 PERIOD OF OBSERV - 1750 - 12/70
 ALTITUDE (M) - 0
 ALPHA ANGLE - 50.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HP	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	3.83	6.13	-.2993	.05	3.76	-.3445	.20	5.26	900	1.23	1.23	.20	.20	.51	6.14	.3374	.27	4.94
36	48	6.20	6.84	-.4772	.18	4.97	-.4529							.56	5.30	.3564	.27	4.68	
60	72	7.27	7.27	-.5203	.21	6.47	-.5942							.61	5.46	.3738	.27	4.43	
				-.5518	.24	6.83	-.6153							.63	5.32	.3727	.27	4.27	
				-.5631	.24	7.13	-.6347							.65	5.23	.3684	.25	4.16	
																	.3426	.23	4.08

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

STATION - CAFE NEWEDY
AGENCY - CAFE NEWEDY
DATE - 12/27/00
TIME - 1957
CITY - NEWEDY
STATE - NEWEDY
COUNTRY - NEWEDY
LATITUDE - 30.00
LONGITUDE - 90.00
X = UAT T
Y = UAT T
XP = UAT T + DT
YP = UAT T + DT
UAT T = UAT T
UAT T = UAT T
UAT T = UAT T
UAT T = UAT T

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP											
QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP											
MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP, YP)	MEAN YP	S.D. YP	
1.54	6.34	.3457	.23	5.76	903	1.60	.24				
12	.55	4.13	.57	-.3231	.0223	6.61	.36	.3860	.76	5.42	
24	.44	3.71	.45	-.4749	.0545	6.35	.35	.4002	.83	5.15	
36	.30	3.31	.32	-.5147	.0654	6.14	.33	.4083	.87	4.91	
48	.15	2.93	.23	-.5350	.0684	5.94	.31	.4139	.89	4.74	
60	.05	2.59	.16	-.5370	.0759	5.75	.29	.4060	.92	4.63	
72	.38	2.27	.05	-.5102	.1211	5.67	.26	.3970	.94	4.56	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12999) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 8
 ALPHA ANGLE - 30.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N
12	.09	4.34	-.2768	.09	4.36	.3835	.11	6.33	900
24	.19	5.66	-.3605	.17	5.67				
36	.29	6.82	-.4323	.24	6.70				
48	.36	7.67	-.4826	.25	7.33				
60	.43	8.17	-.5236	.27	7.80				
72	.50	8.51	-.5459	.26	8.07				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y		
	2.19	.11		
	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.20	.4307	.46	5.93
24	1.27	.4494	.40	5.66
36	1.33	.4585	.36	5.40
48	1.35	.4723	.31	5.23
60	1.37	.4710	.26	5.13
72	1.39	.4533	.21	5.08

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112859 - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1953 - 12/70
 ALTITUDE (IN) - 3
 ALPH. ANGLE - 50.0

X = U(1-T)
 Y = V(1-T)
 XP = U(1-T + DT) = U(1-T)
 YP = V(1-T + DT) = V(1-T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN Y	S.D. Y	R (X,Y)	MEAN X	S.D. X	N	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	P (XP,Y)	R (XP,X)	MEAN Y	S.D. Y	R (X,Y)
3 10	3.10	8.17	3858	10	100	900	10	100	100	10	100	100	100	10	100	100

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	P (XP,Y)	R (XP,X)	MEAN Y	S.D. Y	R (X,Y)	MEAN X	S.D. X	N	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	P (XP,Y)	R (XP,X)
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12869) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 10
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.11	5.20	-.2979	.07	5.47	.3811	-.14	8.01	900	2.08	8.64	.4165	.62	7.53
24	.27	6.82	-.3708	.14	7.04					2.20	8.37	.4361	.49	7.24
36	.39	8.26	-.4445	.24	8.39					2.27	8.08	.4654	.42	6.91
48	.51	9.21	-.4949	.29	9.15					2.33	7.84	.4713	.33	6.71
60	.58	9.86	-.5299	.32	9.73					2.34	7.67	.4684	.23	6.53
72	.70	10.27	-.5537	.34	10.09					2.36	7.54	.4578	.12	6.45

BIOMASS AND LOGNORMAL BIOMASS NORMAL STATISTICS OF Y, YP, YB

STATION 1285 - CAGE REEF
 DATE 12/15/78
 TIME 10:00
 BY J. J. J.

Y = UAT
 YP = UAT
 YB = UAT

STATISTICS OF Y, YP, YB

Y	YP	YB	MEAN	S.D.	N
1.03	1.03	1.03	1.03	9.12	501

CONJUGATE BIOMASS NORMAL STATISTICS FOR YP AND YB

Y	YP	YB	Y		YP		YB	
			MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
1.03	1.03	1.03	1.03	9.12	1.03	9.12	1.03	9.12

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12893 - CAPE KENNEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1955 - 12/73
ALTITUDE (MM) - 12
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	P (X,YP)	MEAN YP	S.D. YP	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,YP)	GIVEN X	GIVEN Y	S.D. YP
12	.15	5.73	-.2545	.05	6.18	-.3013	-1.09	9.93	900	3.20	10.22	.3631	.29	9.44	.3631	5.98	-1.22	9.44
24	.34	7.52	-.3570	.11	8.50	-.4153				3.27	9.91	.3784	.19	9.00	.3784			9.00
36	.47	9.28	-.4287	.16	10.24	-.5021				3.31	9.57	.3977	.01	8.56	.3977			8.56
48	.60	10.42	-.4912	.23	11.27	-.5513				3.35	9.29	.4078	-.08	8.27	.4078			8.27
60	.72	11.35	-.5449	.31	11.99	-.5851				3.38	9.03	.4135	-.18	8.05	.4135			8.05
72	.89	11.83	-.5751	.33	12.62	-.6093				3.40	8.83	.4175	-.31	7.87	.4175			7.87

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12853) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 AZIMUTH ANGLE - 90.0

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. Y	N	MEAN X	S.D. Y	R (X,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)	N
12	.15	5.34	-.2505	.05	5.63	-.2946	4.91	10.16	900	-2.45	9.48	.2684	3.11	9.80	.2777	-1.46	9.32	-.1145	900
24	.35	6.78	-.3262	.12	7.54	-.3969							3.15	9.54	.2837	-1.46	8.68	-.1508	
36	.49	8.39	-.4016	.16	9.44	-.4869							3.09	9.25	.2935	-1.64	5.23	-.1539	
48	.58	9.51	-.4593	.25	10.56	-.5484							3.06	8.98	.3060	-1.74	7.89	-.1486	
60	.73	10.33	-.5025	.31	11.51	-.5952							3.03	8.76	.3168	-1.87	7.60	-.1312	
72	.91	10.80	-.5306	.33	12.06	-.6214							3.03	8.60	.3290	-1.98	7.42	-.1099	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT) - U(1AT T)
 YP = V(1AT T + DT) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
12	.16	4.53	-.2443	.04	4.37	-.2966	-2.41	7.22	900
24	.32	5.65	-.3113	.09	5.67	-.3808			
36	.46	6.95	-.3844	.13	6.97	-.4712			
48	.57	7.80	-.4405	.19	7.82	-.5300			
60	.69	8.61	-.4920	.24	8.63	-.5763			
72	.84	9.06	-.5223	.27	9.03	-.6052			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
GIVEN X	2.97	8.27	.2372	-.84	6.86
GIVEN Y	-2.27	8.11	.2422	-.89	6.64
		7.88	.2517	-.97	6.33
		7.66	.2712	-1.01	6.10
		7.44	.2850	-1.08	5.89
		7.29	.2865	-1.12	5.74

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12959) - CAPE KENNEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 16
FLP-4A ANGLE - 90.0

X = U(AT T)
Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
12	.23	6.62	.3031	-1.98	5.15	900

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.11	3.63	-.2669	.03	4.08	-.3898	.0743	.0172	-.0551	.34	6.38	.3317	-1.03	4.74
24	.23	4.13	-.2932	.05	4.21	-.4004	.1184	.0160	-.0384	.46	6.31	.3287	-1.02	4.71
36	.34	5.03	-.3665	.09	5.27	-.5009	.0799	.0189	-.0765	.46	6.15	.3566	-1.01	4.45
48	.48	5.61	-.4084	.09	5.74	-.5476	.1083	.0040	-.1025	.54	6.03	.3584	-1.01	4.30
60	.60	6.23	-.4604	.14	6.31	-.5989	.0971	-.0120	-.0903	.57	5.87	.3810	-1.00	4.12
72	.73	6.55	-.4870	.17	6.47	-.6129	.1176	-.0442	-.0969	.62	5.78	.3732	-.98	4.07

STATION (1258) - CAPE KENNEDY
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/55 - 12/70
ALTITUDE (M) - 17
ALPHA ANGLE - 90.0

$$\begin{array}{l} \mathbf{x} = \mathbf{U}(\mathbf{A}^T \mathbf{T}) \\ \mathbf{y} = \mathbf{V}(\mathbf{A}^T \mathbf{T}) \end{array} \quad \begin{array}{l} \mathbf{x}^p = \mathbf{U}(\mathbf{A}^T \mathbf{T}^p) \\ \mathbf{y}^p = \mathbf{V}(\mathbf{A}^T \mathbf{T}^p) \end{array}$$
$$\begin{aligned} \dot{X}^P &= U(AT \div DT) - U(AT \cdot T) \\ \dot{Y}^P &= V(AT \cdot T \div DT) - V(AT \cdot T) \end{aligned}$$

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X _P	S.D. X _P	P (X _P , Y _P)	MEAN Y _P	S.D. Y _P	N	R (Y _P , X _P)	MEAN X _P	GIVEN X	R	MEAN Y _P	S.D. Y _P
12	1.5	3.80	-.3481	-.4903	.0029	.0145	-.0071	-.86	5.05	.2726	-.67	3.23
20	.20	3.65	-.3322	-.4612	.0278	-.0478	-.0562	-.75	5.07	.2678	-.76	3.28
30	.20	4.67	-.4283	-.5849	.0942	-.0115	-.0751	-.73	4.86	.2677	-.69	2.99
40	.40	4.87	-.4474	-.5957	.0670	.0092	-.0757	-.67	4.81	.2755	-.70	2.97
60	.51	4.932	-.4932	-.6729	.1329	-.0496	-.1007	-.63	4.66	.2938	-.66	2.66
72	.51	5.58	-.5204	-.6721	.1024	-.0468	-.0796	-.71	4.60	.2825	-.64	2.74

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 18
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
-3.83	4.43	.2028	-.75	3.01	900

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
-3.81	-.72

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.10	3.48	-.3574	.02	3.48	-.5778	.0854	-.0267	-.0492	-1.95	4.09	.2435	-.46	2.46
24	.18	3.19	-.3544	.04	3.24	-.5413	.1089	-.0101	-.0788	-1.90	4.14	.2261	-.56	2.53
36	.27	4.03	-.4470	.05	3.98	-.6842	.1106	-.0141	-.0945	-1.87	3.96	.2498	-.55	2.25
48	.33	4.07	-.4564	.07	3.98	-.6640	.1649	-.0602	-.1204	-1.82	3.94	.2187	-.50	2.25
60	.42	4.68	-.5165	.07	4.34	-.7209	.1590	-.0523	-.1379	-1.81	3.79	.2290	-.52	2.08
72	.49	4.68	-.5203	.06	4.26	-.7076	.1713	-.0797	-.1310	-1.76	3.78	.2185	-.48	2.13

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 19
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN				S.D.				R				MEAN				S.D.				GIVEN			
	XP	Y	XP	Y	XP	Y	XP	Y	XP	Y	XP	Y	XP	Y	XP	Y	XP	Y	XP	Y	X	Y	X	Y
12	19	27	35	43	51	59	67	75	83	91	99	107	115	123	131	139	147	155	163	171	179	187	195	203
24	19	27	35	43	51	59	67	75	83	91	99	107	115	123	131	139	147	155	163	171	179	187	195	203
36	19	27	35	43	51	59	67	75	83	91	99	107	115	123	131	139	147	155	163	171	179	187	195	203
48	19	27	35	43	51	59	67	75	83	91	99	107	115	123	131	139	147	155	163	171	179	187	195	203
60	19	27	35	43	51	59	67	75	83	91	99	107	115	123	131	139	147	155	163	171	179	187	195	203
72	19	27	35	43	51	59	67	75	83	91	99	107	115	123	131	139	147	155	163	171	179	187	195	203

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 128500 - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1955 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,Y)	R (YP,X)	MEAN YP	S.D. YP
12	.03	3.74	-.4850	3.89	.293	-.45	2.42	900	-9.13	-.46	-3.0	3.40	-.1573	-.0182	.01	1.73
24	.21	3.20	-.4279			-.6234	.0990				-3.22	3.52	.1601	-.0514	-.48	1.89
36	.31	4.02	-.5312			-.6962	.1166				-3.20	3.30	.1613	-.0323	-.12	1.73
48	.41	3.78	-.5116			-.6930	.1559				-3.04	3.35	.1411	-.0725	-.32	1.74
60	.50	4.41	-.5793			-.7232	.1365				-3.13	3.17	.1431	-.0529	-.12	1.67
72	.61	4.16	-.5539			-.6979	.1451				-3.02	3.24	.1353	-.0633	-.17	1.73

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF Y, Y, XP, YP

STATION 112889 - CAPE KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1 56 - 12 70
 ALTITUDE (KM) - 2
 ALTITUDE ANGLE - 30.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT) - U(1AT T)
 YP = V(1AT T + DT) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. YP	R (X,XP)	MEAN YP	S.D. XP	R (Y,YP)	MEAN X	S.D. Y	R (XP,Y)	MEAN XP	S.D. YP	R (XP,YP)	MEAN Y	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.11	3.42	-.4751	-.01	3.45	-.6508	-9.64	3.11	0.74	2.47	900	-.0678	-.0678	-.0678	-.0678	-.0678	1.79
24	.23	3.04	-.4316	-.01	3.45	-.6508						-.0678	-.0678	-.0678	-.0678	-.0678	1.88
36	.34	3.04	-.4316	-.01	3.45	-.6508						-.0678	-.0678	-.0678	-.0678	-.0678	1.75
48	.45	3.53	-.5350	0	3.45	-.6508						-.0678	-.0678	-.0678	-.0678	-.0678	1.80
60	.57	4.06	-.5639	.03	3.45	-.6508						-.0678	-.0678	-.0678	-.0678	-.0678	1.73
72	.68	3.88	-.5341	.01	3.45	-.6508						-.0678	-.0678	-.0678	-.0678	-.0678	1.78

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1970) - DATA REMEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1955 - 1970
 ALPHAS (1970) - 1.0
 ALPHA ANGLE - 30.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
	-10.89	3.55	-0.0208	-0.27	2.50	900				-10.95	-0.25					
12	.10	3.33	-0.4705	-0.00	3.57	-0.088	-0.0088	-0.0302	-0.0184	0.306	-0.0287	-0.0287	-5.36	3.13	-0.19	1.76
24	.22	3.19	-0.4431	-0.01	3.20	-0.6353	-0.6353	-0.0264	-0.0174	-0.0142	-0.0435	-0.0435	-5.30	3.17	-0.15	1.93
36	.31	3.57	-0.4934	.01	3.64	-0.7177	-0.7177	-0.0255	-0.0237	0.326	-0.0304	-0.0304	-5.30	3.08	-0.19	1.73
48	.44	3.72	-0.5167	-0.00	3.43	-0.6856	-0.6856	-0.0245	-0.0285	0.085	-0.0337	-0.0337	-5.28	3.04	-0.06	1.82
60	.55	3.90	-0.5395	-0.02	3.63	-0.7243	-0.7243	-0.0110	-0.0049	0.0184	-0.0157	-0.0157	-5.25	2.99	-0.13	1.72
72	.67	4.01	-0.5535	-0.03	3.52	-0.6994	-0.6994	-0.0517	-0.0552	-0.0034	-0.0556	-0.0556	-5.33	2.99	-0.02	1.78

QUADRATIC AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, YP, YP

STATION 128881 - CASE KENEDY
 PERIOD OF RECORD - 51 MEER
 PERIOD OF RECORD - 11/12/70
 ALTITUDE - 2
 ALTITUDE - 90

X = U(AT T)
 Y = V(AT T)
 YP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRATIC NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X,YP)	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	P (YP,Y)	R (XP,YP)	S.D. YP
2	1.2	3.7	-4.95	3.72	.0281	-37	2.51	900	.0057	.0057	1.72
25	2.0	3.75	-4.95						.0102	.0085	1.88
75	3.5	3.73	-4.95						.0319	.0212	1.58
78	4.0	3.95	-4.97						.0395	.0307	1.80
90	5.0	4.10	-5.07						.0706	.0784	1.69
92	5.5	4.20	-5.372						.0862	.0857	1.77

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

MEAN XP	S.D. XP	P (XP,YP)	R (XP,YP)	S.D. YP	MEAN YP	S.D. YP
-5.91	3.77	.0474	.0474	1.72	-1.2	1.72
-5.89	3.73	.0390	.0390	1.88	-1.0	1.88
-5.95	3.26	.0281	.0281	1.58	.01	1.58
-6.02	3.27	.0225	.0225	1.80	-.04	1.80
-6.01	3.25	-.0120	-.0120	1.69	-.04	1.69
-5.95	3.14	.0169	.0169	1.77	-.15	1.77

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: CLEGG - CAPT KENNEDY
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1955 - 12/70
 ALTITUDE - KM. - 35.0
 ALTITUDE - 35.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, X)	R (XP, Y)	R (YP, X)	R (YP, Y)	R (X, Y)
12	.13	3.47	-.4325	-12.39	3.90	900	-12.39	3.90	.0595	-.45	2.62	-.0419	-.0257	-.0105	.0077	-.0419	-.0257	-.0105	.0077
24	.23	3.43	-.4242																
36	.36	3.84	-.4717																
48	.43	4.02	-.4890																
60	.64	4.21	-.4983																
72	.78	4.37	-.5196																

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1123581 - CAPE VENEZIA
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 25
 AZIMUTH ANGLE - 000

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
MEAN		S.D.	R	MEAN	S.D.	N	GIVEN		GIVEN		S.D.	R	MEAN	S.D.	GIVEN		S.D.	R	MEAN
X	Y	X	(X,Y)	(Y,Y)	Y		X	Y	XP	YP	XP	(XP,Y)	YP	YP	X	Y	XP	(XP,Y)	YP
-12.99	06.19	4.20	06.19	-55	2.76	900	-12.80	-0.70											
MEAN	MEAN	P	S.D.	P	S.D.	P	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN
XP	YP	(X,XP)	XP	(Y,YP)	YP	(XP,YP)	XP	YP	XP	YP	XP	YP	XP	YP	XP	YP	XP	YP	XP
3.58	3.58	0.298	3.58	0.298	3.58	0.298	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
3.63	3.63	0.308	3.63	0.308	3.63	0.308	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63
4.16	4.16	0.308	4.16	0.308	4.16	0.308	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.16
4.30	4.30	0.308	4.30	0.308	4.30	0.308	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30
4.43	4.43	0.308	4.43	0.308	4.43	0.308	4.43	4.43	4.43	4.43	4.43	4.43	4.43	4.43	4.43	4.43	4.43	4.43	4.43
4.61	4.61	0.308	4.61	0.308	4.61	0.308	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61
4.79	4.79	0.308	4.79	0.308	4.79	0.308	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79
4.97	4.97	0.308	4.97	0.308	4.97	0.308	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97	4.97
5.15	5.15	0.308	5.15	0.308	5.15	0.308	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15
5.33	5.33	0.308	5.33	0.308	5.33	0.308	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33
5.51	5.51	0.308	5.51	0.308	5.51	0.308	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51
5.69	5.69	0.308	5.69	0.308	5.69	0.308	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69
5.87	5.87	0.308	5.87	0.308	5.87	0.308	5.87	5.87	5.87	5.87	5.87	5.87	5.87	5.87	5.87	5.87	5.87	5.87	5.87
6.05	6.05	0.308	6.05	0.308	6.05	0.308	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05
6.23	6.23	0.308	6.23	0.308	6.23	0.308	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23
6.41	6.41	0.308	6.41	0.308	6.41	0.308	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41	6.41
6.59	6.59	0.308	6.59	0.308	6.59	0.308	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59	6.59
6.77	6.77	0.308	6.77	0.308	6.77	0.308	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77
6.95	6.95	0.308	6.95	0.308	6.95	0.308	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95
7.13	7.13	0.308	7.13	0.308	7.13	0.308	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13	7.13
7.31	7.31	0.308	7.31	0.308	7.31	0.308	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31	7.31
7.49	7.49	0.308	7.49	0.308	7.49	0.308	7.49	7.49	7.49	7.49	7.49	7.49	7.49	7.49	7.49	7.49	7.49	7.49	7.49
7.67	7.67	0.308	7.67	0.308	7.67	0.308	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67
7.85	7.85	0.308	7.85	0.308	7.85	0.308	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85
8.03	8.03	0.308	8.03	0.308	8.03	0.308	8.03	8.03	8.03	8.03	8.03	8.03	8.03	8.03	8.03	8.03	8.03	8.03	8.03
8.21	8.21	0.308	8.21	0.308	8.21	0.308	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21
8.39	8.39	0.308	8.39	0.308	8.39	0.308	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39
8.57	8.57	0.308	8.57	0.308	8.57	0.308	8.57	8.57	8.57	8.57	8.57	8.57	8.57	8.57	8.57	8.57	8.57	8.57	8.57
8.75	8.75	0.308	8.75	0.308	8.75	0.308	8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75	8.75
8.93	8.93	0.308	8.93	0.308	8.93	0.308	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93
9.11	9.11	0.308	9.11	0.308	9.11	0.308	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.11	9.11
9.29	9.29	0.308	9.29	0.308	9.29	0.308	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29
9.47	9.47	0.308	9.47	0.308	9.47	0.308	9.47	9.47	9.47	9.47	9.47	9.47	9.47	9.47	9.47	9.47	9.47	9.47	9.47
9.65	9.65	0.308	9.65	0.308	9.65	0.308	9.65	9.65	9.65	9.65	9.65	9.65	9.65	9.65	9.65	9.65	9.65	9.65	9.65
9.83	9.83	0.308	9.83	0.308	9.83	0.308	9.83	9.83	9.83	9.83	9.83	9.83	9.83	9.83	9.83	9.83	9.83	9.83	9.83
10.01	10.01	0.308	10.01	0.308	10.01	0.308	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01	10.01
10.19	10.19	0.308	10.19	0.308	10.19	0.308	10.19	10.19	10.19	10.19	10.19	10.19	10.19	10.19	10.19	10.19	10.19	10.19	10.19
10.37	10.37	0.308	10.37	0.308	10.37	0.308	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37
10.55	10.55	0.308	10.55	0.308	10.55	0.308	10.55	10.55	10.55	10.55	10.55	10.55	10.55	10.55	10.55	10.55	10.55	10.55	10.55
10.73	10.73	0.308	10.73	0.308	10.73	0.308	10.73	10.73	10.73	10.73	10.73	10.73	10.73	10.73	10.73	10.73	10.73	10.73	10.73
10.91	10.91	0.308	10.91	0.308	10.91	0.308	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91
11.09	11.09	0.308	11.09	0.308	11.09	0.308	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09	11.09
11.27	11.27	0.308	11.27	0.308	11.27	0.308	11.27	11.27	11.27	11.27	11.27	11.27	11.27	11.27	11.27	11.27	11.27	11.27	11.27
11.45	11.45	0.308	11.45	0.308	11.45	0.308	11.45	11.45	11.45	11.45	11.45	11.45	11.45	11.45	11.45	11.45	11.45	11.45	11.45
11.63	11.63	0.308	11.63	0.308	11.63	0.308	11.63	11.63	11.63	11.63	11.63	11.63	11.63	11.63	11.63	11.63	11.63	11.63	11.63
11.81	11.81	0.308	11.81	0.308	11.81	0.308	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81
11.99	11.99	0.308	11.99	0.308	11.99	0.308	11.99	11.99	11.99	11.99	11.99	11.99	11.99	11.99	11.99	11.99	11.99	11.99	11.99

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

MEAN Y _P	S.D. Y _P	S _P (X _P , Y _P)	MEAN Y _P	S.D. Y _P	R _P (Y _P , Y _P)	R _P (X _P , Y _P)	R _P (Y _P , X _P)	GIVEN X	GIVEN Y	P (X _P , Y _P)	MEAN Y _P	S.D. Y _P
-12.57	5.13	-0.14	-1.32	3.02	900			-13.23	-1.05			
MEAN Y _P	S.D. Y _P	S _P (X _P , Y _P)	MEAN Y _P	S.D. Y _P	R _P (Y _P , Y _P)	R _P (X _P , Y _P)	R _P (Y _P , X _P)	S.D. X _P	GIVEN Y	P (X _P , Y _P)	MEAN Y _P	S.D. Y _P
2.17	2.8	12.4	3.1	3.88	1237	1044	885	4.64	-0.01	-0.33	2.32	2.32
1.7	1.7	10.0	3.3	3.4	1338	1346	853	4.70	-0.115	-0.31	2.30	2.30
1.0	1.0	10.0	3.7	3.122	1122	1008	894	4.55	0.055	-0.35	2.19	2.19
0.8	0.8	10.0	7.05	6.75	675	675	885	4.57	0.015	-0.33	2.15	2.15
0.6	0.6	10.0	7.1	6.38	638	644	885	4.46	0.01	-0.33	2.13	2.13
0.4	0.4	10.0	7.03	6.0	600	600	840	4.50	0.013	-0.33	2.11	2.11

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12868) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
9	1/56 - 12/70	0	90.0	-1.59	2.77	.2344	-.24	2.70	900
9	1/56 - 12/70	1	90.0	-2.26	5.65	.2675	.43	4.33	900
9	1/56 - 12/70	2	90.0	-.93	5.93	.2795	.42	4.77	900
9	1/56 - 12/70	3	90.0	-.01	6.01	.2608	.52	4.63	900
9	1/56 - 12/70	4	90.0	.53	6.01	.2804	.56	4.62	900
9	1/56 - 12/70	5	90.0	.89	6.21	.3041	.39	4.89	900
9	1/56 - 12/70	6	90.0	1.10	6.44	.3035	.20	5.28	900
9	1/56 - 12/70	7	90.0	1.54	6.94	.3457	.23	5.76	500
9	1/56 - 12/70	8	90.0	2.20	7.56	.3935	.11	6.33	900
9	1/56 - 12/70	9	90.0	3.10	8.17	.3868	.10	7.00	900
9	1/56 - 12/70	10	90.0	3.99	9.06	.3811	-.14	8.01	900
9	1/56 - 12/70	11	90.0	4.85	10.03	.3785	-.49	9.02	900
9	1/56 - 12/70	12	90.0	5.85	10.63	.3403	-1.09	9.93	900
9	1/56 - 12/70	13	90.0	5.96	10.90	.3121	-1.77	10.36	900
9	1/56 - 12/70	14	90.0	4.91	10.16	.2834	-2.46	9.48	900
9	1/56 - 12/70	15	90.0	2.68	8.57	.2226	-2.41	7.22	900
9	1/56 - 12/70	16	90.0	.23	6.62	.3031	-1.98	5.15	900
9	1/56 - 12/70	17	90.0	-1.81	5.38	.2206	-1.21	3.71	900
9	1/56 - 12/70	18	90.0	-3.89	4.43	.2028	-.75	3.01	900
9	1/56 - 12/70	19	90.0	-6.10	3.95	.1730	-.64	2.61	900
9	1/56 - 12/70	20	90.0	-8.07	3.89	.1293	-.45	2.42	900
9	1/56 - 12/70	21	90.0	-9.64	3.60	.0294	-.21	2.47	900
9	1/56 - 12/70	22	90.0	-10.89	3.55	-.0208	-.27	2.50	900
9	1/56 - 12/70	23	90.0	-11.79	3.72	.0281	-.27	2.51	900
9	1/56 - 12/70	24	90.0	-12.39	3.90	.0535	-.45	2.62	900
9	1/56 - 12/70	25	90.0	-12.99	4.20	.0619	-.65	2.76	900
9	1/56 - 12/70	26	90.0	-13.32	4.65	.0753	-.93	2.65	900
9	1/56 - 12/70	27	90.0	-13.57	5.13	-.0414	-1.02	3.02	900

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (1980B) - CAPE WENDEY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 0
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	-1.15	3.18	.0345	-1.18	2.89	930
	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	N
12	.02	2.79	.0279	-.42	2.45	
24	.05	2.73	.0282	-.52	2.36	
36	.03	2.79	.0176	-.62	2.45	
48	.13	2.95	.0109	-.67	2.74	
60	.17	3.37	.0375	-.6797	3.93	
72	.21	4.33	.0347	-.6857	3.97	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-.50	2.84	.0439	-.62	2.60
	-.48	2.77	.0330	-.64	2.45
	-.52	2.54	.0361	-.60	2.29
	-.56	2.49	.0357	-.57	2.20
	-.58	2.33	.0132	-.56	2.12
	-.59	2.36	.0157	-.55	2.10

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN Y	S.D. Y	N	R (XP, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.02	3.87	-.3049	-1.15	5.14	930	.1422	-.3661	3.79	-.04	-.86	4.63
24	.05	5.58	-.4458				.1897	-.4870	5.03	-.11	-.77	4.35
36	.10	6.91	-.5325				.1889	-.5939	6.12	-.15	-.69	4.05
48	.16	7.75	-.6160				.1870	-.6499	6.72	-.20	-.64	3.87
60	.20	8.22	-.6454				.1838	-.6819	7.07	-.23	-.60	3.75
72	.28	8.57	-.6706				.1717	-.6820	7.06	-.29	-.60	3.76

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	-1.56	-1.42

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12558) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

D ² HP	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP				
12	.46	6.20	.2327	-.21	4.89	930														
24																				
36																				
48																				
60																				
72																				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12863) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	2.36	6.33	.2111	.27	4.93	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	2.74	.08

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.03	3.98	-.3054	-.07	3.82	-.3826	.1464	.1066	-.1839	1.09	5.96	.2184	.75	4.53
24	.07	5.49	-.4215	-.13	4.99	-.5024	.1894	.0821	-.2374	1.11	5.65	.2135	.60	4.21
36	.13	6.75	-.5175	-.15	5.82	-.5849	.2232	.0169	-.2438	1.13	5.35	.2083	.45	3.97
48	.22	7.55	-.5658	-.17	6.30	-.6275	.2381	-.0370	-.2314	1.19	5.18	.2011	.34	3.83
60	.29	8.09	-.6189	-.18	6.67	-.6518	.2680	-.0853	-.2252	1.22	5.05	.1933	.28	3.75
72	.38	8.35	-.6147	-.21	6.94	-.6750	.2486	-.1056	-.1900	1.27	4.99	.2081	.22	3.66

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/79
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N
12	.07	4.37	-.3205	-.11	4.24	-.3949	.26	5.76	930
24	.14	5.82	-.4218	-.17	5.68	-.4911			
36	.23	6.05	-.4978	-.21	6.62	-.5720			
48	.34	7.58	-.5499	-.24	7.32	-.6159			
60	.49	8.09	-.5802	-.26	7.74	-.6429			
72	.66	8.43	-.5302	-.27	7.98	-.6605			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
GIVEN X	2.78	6.39	.2725	1.33	5.28
GIVEN Y	2.88	6.12	.2623	.93	4.94
	2.90	5.88	.2567	.65	4.67
	2.92	5.68	.2490	.44	4.50
	2.98	5.55	.2616	.29	4.39
	3.11	5.51	.2657	.20	4.31

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12900) - CAPE FAREEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 0
 AZIMUTH ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	MEAN YP	S.D. YP
01	7.80	7.80	5.46	5.46	730	3.77	6.93	1.55	5.92
02						3.84	6.69	1.15	5.58
03						3.87	6.44	.78	5.27
04						3.91	6.26	.52	5.09
05						4.00	6.14	.45	4.98
06						4.15	6.09	.39	4.93

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y	R (XP, YP)	S.D. XP	S.D. YP
01	7.80	.41	.2704	6.93	5.92
02			.2616	6.69	5.58
03			.2520	6.44	5.27
04			.2416	6.26	5.09
05			.2631	6.14	4.98
06			.2780	6.09	4.93

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12368) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 7
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
12	9.43	8.40	.2499	.27	7.40	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.11	5.35	-.3243	-.07	5.60	-.3678	4.63	7.90	.2704	1.70	6.82
24	.23	7.19	-.4334	-.13	7.55	-.4913	4.75	7.52	.2651	1.19	6.38
36	.38	8.25	-.4968	-.18	8.72	-.5649	4.80	7.27	.2543	.76	6.07
48	.57	8.89	-.5308	-.17	9.40	-.5959	4.88	7.11	.2571	.62	5.91
60	.76	9.41	-.5542	-.17	9.81	-.6098	5.00	6.99	.2768	.57	5.83
72	.95	9.95	-.5744	-.15	9.99	-.6227	5.18	6.87	.2862	.58	5.75

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - OCTOBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 0
ALPHA ANGLE - 50.0

X	U(AT	T)
Y	V(AT	T)

$$\begin{aligned} x^p &= U(AT \vdash OT) - U(AT \vdash T) \\ y^p &= V(AT \vdash T \vdash OT) - V(AT \vdash T) \end{aligned}$$

UNIDIMENSIONAL NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
11.77	3.40	2493	.37	8.53	930	12.18	.58

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112955 - CAPE KENNEDY
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1958 - 1970
ANALYST - J. J. J.
ANALYST - J. J. J.

X = U(1, 2)
Y = V(1, 2)

XP = U(1, 2) - DT
YP = V(1, 2) - DT

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N
	14.15	10.74	.2355	.55	10.00	930

	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (XP, Y)
DT	1.18	12.15	.5557	1.13	13.74	.2831
12	1.25	8.55	.2371	1.12	7.05	.2508
24	1.42	10.51	.4734	1.16	9.80	.2641
36	1.57	11.52	.5153	1.17	11.42	.2513
48	1.68	11.66	.5425	1.17	12.26	.2373
60	1.72	12.15	.5557	1.13	13.74	.2631

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. X	P (XP, YP)	MEAN YP	S.D. YP
	14.59	14.59	.78	14.59	14.59

	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT	7.60	8.93	.2565	7.60	7.62
12	7.14	9.78	.2392	7.14	8.37
24	7.09	9.78	.2392	7.09	8.37
36	7.09	9.78	.2392	7.09	8.37
48	7.09	9.78	.2392	7.09	8.37
60	7.09	9.78	.2392	7.09	8.37

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STATISTICS OF THE NORMAL DISTRIBUTION

MEAN
STANDARD DEVIATION
VARIANCE
COEFFICIENT OF VARIATION
KURTOSIS

CONCISE NORMAL STATISTICS									
MEAN	STANDARD DEVIATION	VARIANCE	COEFFICIENT OF VARIATION	KURTOSIS	MEAN	STANDARD DEVIATION	VARIANCE	COEFFICIENT OF VARIATION	KURTOSIS
1.00	1.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	3.00
1.50	1.50	2.25	1.50	3.00	1.50	1.50	2.25	1.50	3.00
2.00	2.00	4.00	2.00	3.00	2.00	2.00	4.00	2.00	3.00
2.50	2.50	6.25	2.50	3.00	2.50	2.50	6.25	2.50	3.00
3.00	3.00	9.00	3.00	3.00	3.00	3.00	9.00	3.00	3.00
3.50	3.50	12.25	3.50	3.00	3.50	3.50	12.25	3.50	3.00
4.00	4.00	16.00	4.00	3.00	4.00	4.00	16.00	4.00	3.00
4.50	4.50	20.25	4.50	3.00	4.50	4.50	20.25	4.50	3.00
5.00	5.00	25.00	5.00	3.00	5.00	5.00	25.00	5.00	3.00
5.50	5.50	30.25	5.50	3.00	5.50	5.50	30.25	5.50	3.00
6.00	6.00	36.00	6.00	3.00	6.00	6.00	36.00	6.00	3.00
6.50	6.50	42.25	6.50	3.00	6.50	6.50	42.25	6.50	3.00
7.00	7.00	49.00	7.00	3.00	7.00	7.00	49.00	7.00	3.00
7.50	7.50	56.25	7.50	3.00	7.50	7.50	56.25	7.50	3.00
8.00	8.00	64.00	8.00	3.00	8.00	8.00	64.00	8.00	3.00
8.50	8.50	72.25	8.50	3.00	8.50	8.50	72.25	8.50	3.00
9.00	9.00	81.00	9.00	3.00	9.00	9.00	81.00	9.00	3.00
9.50	9.50	90.25	9.50	3.00	9.50	9.50	90.25	9.50	3.00
10.00	10.00	100.00	10.00	3.00	10.00	10.00	100.00	10.00	3.00

BI-VARIATE AND UNIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION NUMBER - SAME FEMORY
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1955 - 12/75
 ALPHABETICALLY - 12/75

BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	MEAN Y	S.D. Y	MEAN XP	S.D. XP	MEAN YP	S.D. YP	R (XP, YP)	R (X, Y)	R (XP, X)	R (YP, Y)	R (XP, Y)	R (YP, X)	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
DT WP	18.75	13.11	.67	13.33	.830	.93	.93	.93	.93	.93	.93	.93	.93	.93	.93	.93	.93	.93	.93
12	1.9	3.38	1.9	3.38	1.9	3.38	1.9	3.38	1.9	3.38	1.9	3.38	1.9	3.38	1.9	3.38	1.9	3.38	1.9
24	3.7	3.52	3.7	3.52	3.7	3.52	3.7	3.52	3.7	3.52	3.7	3.52	3.7	3.52	3.7	3.52	3.7	3.52	3.7
36	5.5	3.66	5.5	3.66	5.5	3.66	5.5	3.66	5.5	3.66	5.5	3.66	5.5	3.66	5.5	3.66	5.5	3.66	5.5
48	7.3	3.80	7.3	3.80	7.3	3.80	7.3	3.80	7.3	3.80	7.3	3.80	7.3	3.80	7.3	3.80	7.3	3.80	7.3
60	9.1	3.94	9.1	3.94	9.1	3.94	9.1	3.94	9.1	3.94	9.1	3.94	9.1	3.94	9.1	3.94	9.1	3.94	9.1
72	10.9	4.08	10.9	4.08	10.9	4.08	10.9	4.08	10.9	4.08	10.9	4.08	10.9	4.08	10.9	4.08	10.9	4.08	10.9

DIABYVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112855 - CAPE KENEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 13
 ALPHA ANGLE - 50.5

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

DIABYVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP												
DT HP	MEAN X		S.D. X		P (X, Y)		MEAN Y		S.D. Y		N		MEAN XP		S.D. XP		R (XP, YP)		MEAN YP		S.D. YP	
	MEAN XP	S.D. XP	P (X, YP)	S.D. YP	MEAN X	S.D. X	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	GIVEN X	GIVEN Y	GIVEN X	GIVEN Y	GIVEN X	GIVEN Y	
12	19	6.92	-.2777	7.38	-.2669	12.98	-.0236	-.0346	12.98	-.0236	-.0346	9.95	12.46	20.70	-.15	20.70	-.15	20.70	-.15	20.70	-.15	
24	39	9.20	-.3715	10.49	-.3813	11.861	-.0572	-.0707	10.02	12.04	-.2401	10.02	12.04	20.70	-.15	20.70	-.15	20.70	-.15	20.70	-.15	
35	56	10.91	-.4390	12.06	-.4557	11.954	-.0722	-.0826	10.18	11.65	-.2459	10.18	11.65	20.70	-.15	20.70	-.15	20.70	-.15	20.70	-.15	
49	100	12.17	-.5896	14.53	-.5101	12.016	-.0728	-.0974	10.49	11.35	-.2561	10.49	11.35	20.70	-.15	20.70	-.15	20.70	-.15	20.70	-.15	
60	133	13.06	-.6120	15.77	-.5378	12.196	-.0823	-.1052	10.76	11.14	-.2622	10.76	11.14	20.70	-.15	20.70	-.15	20.70	-.15	20.70	-.15	
72	156	13.85	-.5373	16.44	-.5603	12.199	-.0862	-.1073	11.01	10.93	-.2691	11.01	10.93	20.70	-.15	20.70	-.15	20.70	-.15	20.70	-.15	

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Case No.	Age	Sex	Occupation	Marital Status	Religion	Education	Income	Assets	Liabilities	Net Worth	Comments
1	25	M	Student	Single	Christian	High School	\$1,000	\$500	\$500	\$0	First case
2	30	F	Homemaker	Married	Muslim	College	\$2,000	\$1,000	\$1,000	\$1,000	Second case
3	35	M	Teacher	Married	Hindu	University	\$3,000	\$1,500	\$1,500	\$1,500	Third case
4	40	F	Nurse	Married	Buddhist	College	\$4,000	\$2,000	\$2,000	\$2,000	Fourth case
5	45	M	Engineer	Married	Sikh	University	\$5,000	\$2,500	\$2,500	\$2,500	Fifth case
6	50	F	Retired	Married	Jain	High School	\$6,000	\$3,000	\$3,000	\$3,000	Sixth case
7	55	M	Businessman	Married	Christian	College	\$7,000	\$3,500	\$3,500	\$3,500	Seventh case
8	60	F	Homemaker	Married	Muslim	High School	\$8,000	\$4,000	\$4,000	\$4,000	Eighth case
9	65	M	Retired	Married	Hindu	University	\$9,000	\$4,500	\$4,500	\$4,500	Ninth case
10	70	F	Retired	Married	Buddhist	College	\$10,000	\$5,000	\$5,000	\$5,000	Tenth case

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	15.81	10.19	.2427	-.82	8.51	930										
24																
36																
48																
60																
72																

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
15.69	-.69	8.17	9.76	.2631	1.81	8.09
		8.44	9.45	.2635	1.37	7.77
		8.47	9.14	.2646	.89	7.50
		8.50	8.90	.2712	.82	7.30
		8.54	8.64	.2799	.40	7.12
		8.68	8.51	.2790	.23	6.99

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 16
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	11.38	8.36	.2566	-.72	6.53	930					
24											
36											
48											
60											
72											

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN X	S.D. X	R (XP, X)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.19	4.66	-.2834	-.01	4.38	-.3215			.1142			6.05	7.98	.2809	1.60	6.12
24	.36	5.84	-.3533	.01	5.57	-.4083			.1997			6.26	7.78	.2736	1.26	5.89
36	.61	7.05	-.4243	.02	6.79	-.4840			.2064			6.25	7.55	.2670	.77	5.66
48	.82	7.83	-.4630	.07	7.49	-.5140			.2271			6.36	7.40	.2681	.44	5.56
60	1.06	8.49	-.4952	.10	8.23	-.5510			.2373			6.44	7.26	.3032	.26	5.42
72	1.28	8.95	-.5161	.14	8.55	-.5572			.2551			6.55	7.16	.2993	.09	5.36

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 17
 ALPHA ANGLE - 90.0

X = UAT T)
 Y = VIAT T)
 XP = UAT T - DT)
 YP = VIAT T - DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	S.D. YP
12	.16	4.29	-.2998	-.02	4.10	-.4233	-.4233	.0426	.0791	-.0462	3.82	.3351	.48	4.29	-.0462	3.82	8.69	.3351	4.29
24	.33	4.87	-.3394	-.00	4.34	-.4368	-.4368	.1594	.0650	-.1450	3.85	.3205	.65	4.21	-.1450	3.85	6.57	.3205	4.21
36	.48	5.82	-.4067	-.01	5.45	-.5424	-.5424	.1624	.0276	-.1283	3.85	.3396	.38	3.96	-.1283	3.85	6.39	.3396	3.96
48	.67	6.39	-.4403	.04	5.73	-.5497	-.5497	.2083	-.0782	-.1509	3.98	.3295	.24	3.95	-.1509	3.98	6.29	.3295	3.95
60	.82	7.01	-.4824	.05	6.32	-.6164	-.6164	.2292	-.0723	-.1341	3.98	.3418	.07	3.77	-.1341	3.98	6.15	.3418	3.77
72	1.00	7.40	-.5066	.09	6.41	-.6018	-.6018	.2629	-.1062	-.1409	4.06	.3320	.01	3.79	-.1409	4.06	6.05	.3320	3.79

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STATION (12858) - CAPE KENNEDY
 METHOD OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 18
 ALPHA ANGLE - 90.0

X	=	U(A ₁ Y ₁)		
Y	=	V(A ₁ Y ₁)		
X _P	=	U(A ₁ Y ₁)		
Y _P	=	V(A ₁ Y ₁)		

$$\begin{aligned} \mathbf{X} \mathbf{P} &= \mathbf{U}(\mathbf{A}^T \mathbf{T} + \mathbf{D} \mathbf{T}) - \mathbf{U}(\mathbf{A}^T \mathbf{T}) \\ \mathbf{Y} \mathbf{P} &= \mathbf{V}(\mathbf{A}^T \mathbf{T} + \mathbf{D} \mathbf{T}) - \mathbf{V}(\mathbf{A}^T \mathbf{T}) \end{aligned}$$

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN		S.D.	R	MEAN	S.D.	N	OIVEN		S.D.	MEAN	S.D.		
X	Y	X	(X,Y)	Y	Y		X	Y	Y	YP	YP		
2.96	5.64	.2876		-.41	3.65	930	3.00						
MEAN	S.D.	P	MEAN	S.D.	P	R	MEAN	S.D.	P	MEAN	S.D.		
XP	YP	(X,YP)	XP	YP	(Y,YP)	(XP,Y)	XP	YP	(XP,YP)	XP	YP		
.13	4.21	-.3353	.01	3.57	-.4973	.1614	1.64	5.49	.3239	.06	3.15		
.27	4.18	-.3320	.03	3.50	-.4762	.1609	1.75	5.45	.3256	.15	3.17		
.39	5.23	-.4200	.02	4.54	-.5334	.2325	1.79	5.25	.3271	.01	2.90		
.53	5.95	-.4448	.06	4.67	-.5378	.1941	1.82	5.22	.3358	-.03	2.91		
.60	5.96	-.4400	.10	5.08	-.6454	.2190	1.88	5.09	.3369	-.05	2.77		
.72	6.12	-.4451	.13	5.18	-.6489	.1954	1.86	5.07	.3567	-.06	2.77		

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 19
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
.12	5.00	.2016	-.45	3.11	930

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.15	3.89	-.3721	.03	3.88	-.6182	.0012	.0319	-.0108	.17	4.64	.2890	-.22	2.44	
24	.29	3.77	-.3505	.03	3.45	-.5408	.1669	-.0171	-.0852	.24	4.68	.2305	-.22	2.61	
35	.42	4.40	-.4120	.06	4.18	-.6498	.0618	-.0003	-.0260	.29	4.56	.2903	-.21	2.38	
48	.54	4.74	-.4306	.08	4.13	-.6216	.1465	-.0440	-.0598	.34	4.50	.2629	-.21	2.43	
60	.65	5.19	-.4322	.13	4.61	-.6770	.1285	-.0322	-.0722	.40	4.38	.2856	-.20	2.22	
72	.77	5.42	-.5395	.11	4.48	-.6684	.1926	-.0973	-.0659	.44	4.30	.2506	-.20	2.31	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12368) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 20
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N
	-1.58	4.51	.154	-.31	2.85	930
	MEAN XP	S.D. XP	P (X, P)	MEAN YP	S.D. YP	P (XP, Y)
DT	.13	3.56	-.504	-.02	3.35	.0197
12	.23	3.50	-.375	-.00	3.21	.0332
24	.34	4.54	-.443	-.00	3.23	.0583
36	.47	4.30	-.359	.05	3.87	.0743
48	.59	4.78	-.288	.06	4.27	.0915
60	.71	4.82	-.193	.03	4.10	.0885
72				.03	4.10	.0885

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y			
	-1.78	-.29			
	S.D. XP	R (XP, YP)	MEAN XP	MEAN YP	S.D. YP
DT	4.22	.1886	-.76	-.21	2.31
12	4.28	.1881	-.72	-.21	2.38
24	4.12	.2013	-.67	-.17	2.11
36	4.15	.1964	-.63	-.13	2.17
48	4.03	.2049	-.57	-.15	2.05
60	4.01	.2107	-.52	-.10	2.11
72					

BI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112922 - CAPE KENNEDY
WIND-OF-BEFORE - 01/28/68
PERIOD-OF-BEFORE - 11/56 - 12/70
ALPHA DEGREE - 2
ALPHA ANGLE - 90.0

X = U(1AT T)
Y = V(1AT T)

XP = U(1AT T + DT) - U(1AT T)
YP = V(1AT T + DT) - V(1AT T)

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (X, XP)	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	R (YP, Y)
DT HP																	
12	-2.85	4.32	1594	-1.39	2.70	930											
24																	
36																	
48																	
60																	
72																	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KFT) - 23
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	-3.68	4.63	.0539	-.50	2.75	930											
24																	
36																	
48																	
60																	
72																	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN X	S.D. X	R (XP, YP)	MEAN Y	S.D. Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.13	3.75	-.3928	.01	3.57	.0715											
24	.31	3.75	-.3821	.00	3.25	.0294											
36	.47	4.15	-.4113	-.00	3.85	.0779											
48	.60	4.38	-.4216	.00	3.87	.1192											
60	.77	4.77	-.4551	.03	4.04	.1371											
72	.89	4.93	-.4633	.03	4.09	.1735											

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.3

X - U(1AT T)
 Y - V(1AT T)

XP - U(1AT T + DT) - U(1AT T)
 YP - V(1AT T + DT) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.15	3.60	-.3572	.00	3.51	-.6332	-.6332	.0312	930	-.1.83	4.54	.0784	-.11	2.15
24	.34	3.54	-.3370	.02	3.35	-.6021	-.6021	.0334		-.1.81	4.58	.0731	-.14	2.21
36	.50	4.20	-.3932	.03	3.22	-.7015	-.7015	.0530		-.1.79	4.48	.0699	-.03	1.97
48	.66	4.45	-.3355	.05	3.92	-.6373	-.6373	.0809		-.1.80	4.46	.0693	-.08	1.98
60	.81	4.88	-.4295	.07	4.12	-.7331	-.7331	.1061		-.1.75	4.38	.0733	-.08	1.88
72	.97	5.02	-.4363	.08	4.12	-.7257	-.7257	.1178		-.1.71	4.36	.0675	-.08	1.90

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION NUMBER - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE, YP - 25
 ALPHA ANGLE - 35.6

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	H		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT																	
12	-3.33	5.21	.0845	-.55	2.92	930		-1.75	4.92	.1151	-1.75	4.92	-1.75	4.92	.1151	-1.75	4.92
24								-1.77	4.93	.1204	-1.77	4.93	-1.77	4.93	.1204	-1.77	4.93
36								-1.75	4.85	.1405	-1.75	4.85	-1.75	4.85	.1405	-1.75	4.85
48								-1.73	4.84	.1383	-1.73	4.84	-1.73	4.84	.1383	-1.73	4.84
60								-1.71	4.79	.1661	-1.71	4.79	-1.71	4.79	.1661	-1.71	4.79
72								-1.63	4.74	.1681	-1.63	4.74	-1.63	4.74	.1681	-1.63	4.74

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
	-2.75	5.83	.1502	-1.64	3.05	930										
1	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
2	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
3	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
4	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
5	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
6	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
7	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
8	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
9	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
10	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
11	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
12	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
13	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
14	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
15	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
16	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
17	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
18	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
19	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
20	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
21	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
22	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
23	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
24	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
25	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
26	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
27	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
28	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
29	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
30	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
31	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
32	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
33	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
34	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
35	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
36	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
37	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
38	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
39	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
40	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
41	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
42	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
43	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
44	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
45	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
46	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
47	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
48	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
49	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
50	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
51	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
52	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
53	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
54	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
55	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
56	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
57	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
58	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
59	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
60	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
61	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
62	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
63	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
64	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
65	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
66	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
67	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
68	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
69	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
70	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
71	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					
72	1.27	5.75	.05	-1.62	3.87		1.47	5.56	.0204	-1.3	2.37					

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 27
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.24	3.99	-.3011	-.76	3.23	930	-.78	5.88	.1371	-.22	2.50	-.0104	-.78	5.88	.1371	-.22	2.50
24	.45	4.07	-.2694										-.83	5.93	.1534	-.26	2.61
36	.70	4.67	-.2923										-.83	5.89	.1691	-.20	2.32
48	.94	5.11	-.2133										-.77	5.84	.1781	-.24	2.41
60	1.16	5.71	-.3497										-.69	5.76	.1708	-.18	2.27
72	1.39	6.01	-.2603										-.61	5.74	.1532	-.24	2.34

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12868) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
10	1/56 - 12/70	0	90.0	-1.16	3.18	.0349	-1.18	2.89	930
10	1/56 - 12/70	1	90.0	-2.02	6.02	.1913	-1.15	5.14	930
10	1/56 - 12/70	2	90.0	.46	6.20	.2327	-.21	4.89	930
10	1/56 - 12/70	3	90.0	2.36	6.33	.2111	.27	4.98	930
10	1/56 - 12/70	4	90.0	3.99	6.49	.2022	.38	5.19	930
10	1/56 - 12/70	5	90.0	5.67	6.83	.2566	.26	5.76	930
10	1/56 - 12/70	6	90.0	7.41	7.41	.2589	.31	6.46	930
10	1/56 - 12/70	7	90.0	9.43	8.40	.2499	.27	7.40	930
10	1/56 - 12/70	8	90.0	11.77	9.40	.2493	.37	8.53	930
10	1/56 - 12/70	9	90.0	14.15	10.74	.2389	.55	10.00	930
10	1/56 - 12/70	10	90.0	16.40	12.00	.2173	.77	11.85	930
10	1/56 - 12/70	11	90.0	18.75	13.11	.1921	.67	13.39	930
10	1/56 - 12/70	12	90.0	20.41	13.28	.2025	.46	14.12	930
10	1/56 - 12/70	13	90.0	20.64	12.97	.2279	-.27	13.05	930
10	1/56 - 12/70	14	90.0	19.03	11.96	.2371	-.85	10.83	930
10	1/56 - 12/70	15	90.0	15.81	10.19	.2427	-.82	8.51	930
10	1/56 - 12/70	16	90.0	11.38	8.36	.2566	-.72	6.53	930
10	1/56 - 12/70	17	90.0	6.85	7.02	.2867	-.39	4.76	930
10	1/56 - 12/70	18	90.0	2.96	5.84	.2876	-.41	3.65	930
10	1/56 - 12/70	19	90.0	.12	5.00	.2016	-.45	3.11	930
10	1/56 - 12/70	20	90.0	-1.68	4.61	.1544	-.31	2.85	930
10	1/56 - 12/70	21	90.0	-2.65	4.32	.1694	-.39	2.70	930
10	1/56 - 12/70	22	90.0	-3.26	4.36	.0642	-.52	2.81	930
10	1/56 - 12/70	23	90.0	-3.68	4.63	.0639	-.50	2.75	930
10	1/56 - 12/70	24	90.0	-3.72	4.86	.0535	-.46	2.78	930
10	1/56 - 12/70	25	90.0	-3.39	5.21	.0845	-.55	2.92	930
10	1/56 - 12/70	26	90.0	-2.75	5.83	.1502	-.64	3.06	930
10	1/56 - 12/70	27	90.0	-1.96	6.16	.1192	-.76	3.23	930

DIABYARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION NUMBER - CAPE JENEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE OF STATION - 0
 AVERAGE - 50.0

X = U(1, T)
 Y = V(1, T)
 XP = U(1, T + DT) = U(1, T)
 YP = V(1, T + DT) = V(1, T)

DIABYARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N
	.04	2.90	-.2033	-1.11	2.82	900

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN X	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	.05	2.81	-.1815	-.02	2.80	-.4365	.36	2.48	-.2033	-.63	2.38
24	.05	3.17	-.5371	-.05	3.41	-.6568	.30	2.40	-.1802	-.63	2.17
36	.05	3.72	-.6412	-.07	3.84	-.6803	.22	2.20	-.1528	-.61	2.04
48	.03	3.88	-.6873	-.07	4.01	-.7115	.17	2.18	-.1519	-.59	1.87
60	.02	4.14	-.7534	-.07	4.04	-.7144	.11	2.05	-.1551	-.57	1.87
72	.02	4.03	-.6337	-.05	4.00	-.7023	.08	2.09	-.1690	-.56	2.00

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 1
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
	.18	6.87	.1475	-.66	5.34	903
	MEAN YP	S.D. YP	R (XP,YP)	MEAN XP	S.D. XP	R (YP,X)
DT	12	12	12	12	12	12
12	12	12	12	12	12	12
24	12	12	12	12	12	12
36	12	12	12	12	12	12
48	12	12	12	12	12	12
60	12	12	12	12	12	12
72	12	12	12	12	12	12

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	.75	6.02	.1677	-.44	4.47
	.57	5.67	.1994	-.39	4.13
	.44	5.46	.2123	-.36	3.93
	.36	5.31	.2044	-.35	3.78
	.31	5.22	.1976	-.33	3.75
	.26	5.17	.1987	-.31	3.83

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12853) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (FT) - 2
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	2.94	7.32	.1798	-.18	5.34	900	2.34	-.32
DT HP	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP
12	.11	4.97	-.3390	-.00	4.61	-.4433	1.92	6.62
24	.18	6.83	-.4684	-.06	6.03	-.5764	1.88	6.27
36	.14	8.11	-.5541	-.11	6.93	-.6845	1.80	5.93
48	.11	8.81	-.6115	-.14	7.42	-.7080	1.74	5.76
60	.07	9.21	-.6475	-.14	7.54	-.7280	1.68	5.58
72	.08	9.32	-.6575	-.13	7.42	-.7184	1.67	5.52
DT HP	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (Y, XP)	MEAN YP	S.D. YP	R (XP, Y)	MEAN YP	S.D. YP
12	.11	4.97	-.3390	-.00	4.61	-.4433	.75	4.48
24	.18	6.83	-.4684	-.06	6.03	-.5764	.37	4.16
36	.14	8.11	-.5541	-.11	6.93	-.6845	.16	3.90
48	.11	8.81	-.6115	-.14	7.42	-.7080	.01	3.75
60	.07	9.21	-.6475	-.14	7.54	-.7280	-.09	3.67
72	.08	9.32	-.6575	-.13	7.42	-.7184	-.15	3.70

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 3
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	5.47	7.50	.1970	-.17	5.66	900	3.43	7.03	.2294	.59	4.81
18							3.32	6.70	.2553	.50	4.42
24							3.25	6.45	.2660	.40	4.12
35							3.17	6.13	.2637	.11	4.11
45							3.13	5.81	.2614	-.04	4.05
50							3.13	5.55	.2584	-.08	4.03
72											

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	3.43	7.03	.2294	.59	4.81	900	3.43	7.03	.2294	.59	4.81
18	3.32	6.70	.2553	.50	4.42		3.32	6.70	.2553	.50	4.42
24	3.25	6.45	.2660	.40	4.12		3.25	6.45	.2660	.40	4.12
35	3.17	6.13	.2637	.11	4.11		3.17	6.13	.2637	.11	4.11
45	3.13	5.81	.2614	-.04	4.05		3.13	5.81	.2614	-.04	4.05
50	3.13	5.55	.2584	-.08	4.03		3.13	5.55	.2584	-.08	4.03
72											

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12855) - CAPE WENDEY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 4
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, YP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	7.82	8.00	.2194	-25	6.31	900

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.13	5.17	-.3113	-.01	5.41	.2684	-4237	.0391	.2280	4.62	7.40	.2580	2.45	5.43
24	.22	7.27	-.4427	-.04	7.22	.1671	-.5584	.0689	-.2123	4.58	7.02	.2780	1.37	4.98
36	.29	8.71	-.5353	-.09	8.09	.0732	-.6407	.0949	-.1712	4.51	6.69	.2799	.63	4.77
48	.32	9.58	-.5939	-.10	8.50	.0149	-.6951	.1020	-.1202	4.43	6.42	.2855	.20	4.58
60	.33	10.08	-.6291	-.15	8.62	-.0722	-.7040	.1264	-.1105	4.39	6.21	.2703	-.00	4.48
72	.32	13.40	-.6540	-.13	8.75	-.1135	-.7146	.1573	-.1149	4.34	6.05	.2524	-.08	4.41

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 5
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

CT	PR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
2	2	10.40	8.73	.2569	-.27	7.00	900														
3	3																				
4	4																				
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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 6
ALPHA ANGLE - 90.0

X = U(IAT T)
Y = V(IAT T)
XP = U(IAT T + DT) - U(IAT T)
YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	12	.15	6.45	-.3256	.02	6.06	-.3748	-.2052	.1543	900	12.63	-.57	8.05	8.88	.3238	3.82	7.13
24	24	.31	8.97	-.4523	-.02	8.25	-.5183	-.2286	.0763				7.78	8.42	.3344	2.32	6.61
36	36	.42	10.46	-.5320	-.09	9.28	-.5890	-.2322	-.0038				7.52	8.07	.3420	1.34	6.33
48	48	.47	11.84	-.5959	-.09	9.90	-.6377	-.2373	-.0718				7.34	7.70	.3481	.73	6.09
60	60	.48	12.29	-.6345	-.12	10.35	-.6725	-.2415	-.1255				7.18	7.43	.3502	.32	5.88
72	72	.49	12.71	-.6618	-.14	10.56	-.6873	-.2616	-.1766				7.04	7.21	.3592	.02	5.78

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (KM) - 7
 ALPHA ANGLE - 90.0

X = VIAT T)
 Y = VIAT T)
 XP = VIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	.19	6.40	-.2938	-.02	6.94	-.3746	.1902	.1369	-.2221	9.68	9.65	.3339	.3339	4.74	8.23
24	.37	9.25	-.4283	-.05	9.18	-.5092	.2392	.0487	-.2433	9.43	9.15	.3399	.3399	2.72	7.69
36	.48	11.02	-.5152	-.10	10.40	-.5815	.2512	-.0155	-.2412	9.19	8.70	.3460	.3460	1.73	7.32
48	.59	12.32	-.5803	-.12	11.08	-.6311	.2583	-.0702	-.2332	9.05	8.30	.3480	.3480	1.09	7.02
60	.63	13.12	-.6225	-.17	11.62	-.6690	.2623	-.1222	-.2124	8.87	8.01	.3501	.3501	.56	6.76
72	.65	13.63	-.6324	-.19	11.96	-.6885	.2741	-.1632	-.1955	8.70	7.77	.3467	.3467	.16	6.61

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 112868, - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 8
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
		18.90	11.18	.3210	10.44	10.47	900		18.31	10.56	4.50	9.55

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,X)	MEAN YP	S.D. YP
12	24	18.31	10.56	-.85	18.31	10.56	-.85	18.31	10.56
24	36	11.52	10.56	-.85	11.52	10.56	-.85	11.52	10.56
36	48	11.32	10.04	-.85	11.32	10.04	-.85	11.32	10.04
48	60	11.08	9.58	-.85	11.08	9.58	-.85	11.08	9.58
60	72	10.93	9.17	-.85	10.93	9.17	-.85	10.93	9.17
72		10.76	8.87	-.85	10.76	8.87	-.85	10.76	8.87
		10.55	8.53	-.85	10.55	8.53	-.85	10.55	8.53

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 9
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N
12	.22	1.57	-.2854	-.07	8.23	-.3558	-.27	11.81	900
24	.47	1.63	-.4172	-.08	11.27	-.4895			
36	.68	1.63	-.4958	-.11	12.71	-.5555			
48	.91	1.63	-.5500	-.13	13.53	-.5987			
60	.92	15.29	-.5923	-.17	14.45	-.6452			
72	.95	15.65	-.6177	-.23	15.10	-.6747			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
21.28	-.74	13.44	11.51	.3804	5.56	10.87
		13.28	10.92	.3771	3.74	10.14
		13.01	10.45	.3857	2.64	9.70
		12.78	10.07	.3955	1.89	9.38
		12.61	9.75	.3964	1.35	8.97
		12.40	9.51	.3964	.89	8.69

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12889) - CAPE KENNEDY
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 10
ALPHA ANGLE - 90.0

X = UIAT T)
Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 24.84
S.D. X 13.28
R (X, Y) .3938
MEAN Y -.31
S.D. Y 13.35
N 900

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.24	8.32	-.2888	-.09	8.75	-.3394	.2551	.0246	-.1662	14.91	12.65	.4120	4.63	12.49
24	.53	11.67	-.4091	-.10	12.13	-.4649	.3369	-.0433	-.2344	14.94	12.04	.4111	3.56	11.71
36	.72	13.80	-.4842	-.12	13.91	-.5377	.3271	-.0751	-.2423	14.70	11.52	.4247	2.65	11.17
48	.90	15.23	-.5352	-.11	15.02	-.5880	.3146	-.1053	-.2333	14.51	11.18	.4391	1.90	10.74
60	1.00	16.22	-.5759	-.19	16.03	-.6364	.3410	-.1542	-.2417	14.30	10.83	.4385	1.41	10.26
72	1.04	16.81	-.6035	-.23	16.80	-.6663	.3610	-.1907	-.2541	14.14	10.57	.4285	1.08	9.93

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X 24.12
GIVEN Y -.86

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
27.23	13.80	.3865	-.45	14.85	900

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.27	8.39	-.2697	-.14	9.17	-.3149	.2553	-.0044	-.1328	16.87	13.26	.4004	3.91	14.05
24	.53	11.88	-.3906	-.15	12.87	-.4415	.3119	-.0438	-.2007	16.77	12.65	.4061	3.51	13.24
36	.70	14.12	-.4712	-.17	15.03	-.5248	.3115	-.0727	-.2183	16.45	12.13	.4204	2.83	12.56
48	.85	15.49	-.5197	-.18	16.25	-.5759	.3021	-.0980	-.2156	16.26	11.76	.4332	2.14	12.08
60	.95	16.47	-.5577	-.25	17.42	-.6270	.3132	-.1332	-.2175	16.04	11.44	.4425	1.65	11.53
72	.97	17.12	-.5867	-.36	18.35	-.6611	.3445	-.1697	-.2422	15.90	11.16	.4292	1.44	11.11

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 12
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	29.90	14.03	.4052	-.68	15.47	900				29.02	-1.43					
24	.22	8.37	-.2711	-.12	9.35							17.66	13.48	.4178	3.38	14.67
36	.53	12.03	-.3935	-.18	13.16							17.86	12.85	.4194	3.29	13.67
48	.73	14.23	-.4713	-.18	15.45							17.62	12.33	.4342	3.13	13.13
60	.88	15.49	-.5171	-.16	16.77							17.54	11.96	.4362	2.85	12.60
72	1.00	16.60	-.5580	-.26	17.96							17.40	11.60	.4446	2.58	11.98
	1.04	17.27	-.5859	-.32	19.13							17.25	11.33	.4331	2.15	11.51

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	30.24	13.15	.3793	-.46	14.16	900	-.07	8.02	-.07	11.20	13.39
24							-.12	11.20	-.12	13.39	14.85
36							-.13	13.39	-.13	14.85	16.08
48							-.10	14.85	-.10	16.08	17.23
60							-.19	16.08	-.19	17.23	
72							-.26	17.23	-.26		

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN XP	S.D. YP
29.30	-1.64	12.55	.3957	17.48	13.51
		11.93	.4046	17.54	12.88
		11.47	.4128	17.53	12.20
		11.06	.4143	17.36	11.65
		10.74	.4200	17.14	11.02
		10.51	.4078	17.00	10.58

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (11288) - CAPE KENNEDY
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 14
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	28.33	11.84	.3742	-65	11.90	900

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.24	7.49	-.2827	-.07	7.01	-.3018	17.03	11.31	.3988	4.35	11.28
24	.46	10.04	-.3825	-.12	9.55	-.4127	17.16	10.87	.4075	3.84	10.75
36	.65	11.91	-.4603	-.14	11.26	-.4980	17.03	10.45	.4026	2.91	10.25
48	.78	13.21	-.5148	-.12	12.46	-.5640	16.92	10.09	.4092	2.65	9.75
60	.98	14.20	-.5536	-.18	13.41	-.6222	16.83	9.75	.4106	2.37	9.24
72	1.08	14.88	-.5933	-.28	14.39	-.6634	16.64	9.48	.4080	1.91	8.54

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	GIVEN X	GIVEN Y
	27.26	-1.44

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 12888 - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE IN FT. - 15
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + QT) - U(AT T)
 YP = V(AT T + QT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
24.47	9.90	.3551	-.42	9.88	900									
19	8.73	.2853	-.23	12.95	.1004	-.1722	14.65	9.36	.3838	5.27	9.07	.3838	5.27	9.07
24	8.37	.2811	-.24	12.92	.0494	-.2215	15.15	9.05	.3821	4.34	8.65	.3821	4.34	8.65
35	9.85	.2835	-.11	12.82	.0112	-.2432	14.97	8.74	.3808	3.35	8.23	.3808	3.35	8.23
50	10.23	.2847	-.12	12.86	-.0478	-.2517	14.77	8.47	.3814	2.63	7.85	.3814	2.63	7.85
60	11.04	.2874	-.21	12.91	-.0791	-.2639	14.67	8.19	.3785	2.35	7.39	.3785	2.35	7.39
72	12.28	.2887	-.28	13.07	-.1163	-.2767	14.43	7.94	.3736	1.87	7.06	.3736	1.87	7.06

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 16
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP		
12	.18	5.70	20.01	8.48	.3104	-.42	8.07	900		12.04	7.95	.0701	11.99	7.65	.3253	3.76	7.58		
24	.39	7.20								11.99	7.65	.0497	11.99	7.65	.3327	3.43	7.22		
36	.52	8.32								11.99	7.38	.0121	11.99	7.38	.3283	3.08	6.80		
48	.63	9.16								11.71	7.16	-.0396	11.71	7.16	.3308	2.24	6.50		
60	.73	9.77								11.57	6.93	-.0794	11.57	6.93	.3206	1.82	6.15		
72	.85	10.15								11.43	6.78	-.1278	11.43	6.78	.3083	1.38	5.90		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112368) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (ft) - 17
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT MP	MEAN XP	S.D. YP	R (X,YP)	MEAN YP	S.D. XP	R (X,Y)	MEAN Y	S.D. Y	N
12	15.06	7.43	.2043	-1.43	6.74	900			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT MP	MEAN XP	S.D. YP	R (X,YP)	MEAN YP	S.D. XP	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	1.16	5.29	-.3380	-.00	4.73	.0070	8.56	6.92	.2396	2.60	6.24
24	.34	6.48	-.4135	-.01	5.98	.0762	8.67	6.66	.2452	2.33	5.94
36	.52	7.23	-.4277	-.05	5.93	.1320	8.75	6.51	.2430	1.81	5.65
48	.67	7.95	-.4145	-.06	7.67	.1623	8.80	6.33	.2305	1.44	5.33
60	.83	8.42	-.3490	-.10	8.25	.2013	8.79	6.18	.2208	1.10	5.13
72	1.01	8.71	-.3724	-.13	8.70	.2070	8.77	6.07	.2128	.78	4.95

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (M) - 19
ALPHA ANGLE - 90.0

X	=	U(A,T)	T)
Y	=	V(A,T)	T)

$$\begin{array}{l} \text{XP} = \text{U(AT T} \diamond \text{DT)} - \text{U(AT T)} \\ \text{YP} = \text{V(AT T} \diamond \text{DT)} - \text{V(AT T)} \end{array}$$

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP											
QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP											
MEAN X		S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X		GIVEN Y		
6.44		5.57	.1853	-.17	4.09	900	6.16		-.44		
MEAN XP		S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)
.08	4.52	.3363	-.02	-.4411	.0811	.0211	-.0791	-.0791	3.54	5.20	.2103
.21	4.83	.4130	-.04	-.4488	.1841	-.0190	-.1309	-.1309	3.85	5.17	.1888
.31	5.56	.4936	-.07	-.5445	.1433	-.0150	-.1205	-.1205	3.69	4.97	.2041
.44	5.94	.5142	-.11	-.5833	.1651	-.0458	-.1309	-.1309	3.69	4.86	.1938
.55	6.40	.5553	-.15	-.6313	.1815	-.0664	-.1367	-.1367	3.73	4.71	.1950
.70	6.64	.5800	-.18	-.6495	.1964	-.0934	-.1431	-.1431	3.77	4.62	.1812

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 20
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
4.19	5.32	.1609	-.12	3.42	900

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.07	4.41	-.4134	.02	3.56	-.5198	2.22	4.84	.1763	.07	2.92
24	.20	4.57	-.4173	-.00	3.40	-.4953	2.34	4.83	.1717	.12	2.97
36	.30	5.20	-.4816	.00	3.99	-.5848	2.37	4.66	.1843	.14	2.77
48	.33	5.53	-.5032	-.05	4.02	-.6020	2.41	4.52	.1842	.08	2.73
60	.49	5.80	-.5304	-.05	4.37	-.6714	2.48	4.51	.1716	.08	2.53
72	.59	6.08	-.5528	-.09	4.36	-.6714	2.54	4.43	.1679	.09	2.53

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 21
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	.06	4.27	-.3801	.03	3.33	-.5232	-.02	3.10	900	-.0746	-.0228	1.46	5.11	.2947	3.93	-.86	.47	2.84
24	.13	4.35	-.3809	.04	3.10	-.4864				.1736	-.0423	1.47	5.11	.2597			.44	2.71
36	.23	5.09	-.4505	.05	3.65	-.5809				.1471	-.0888	1.50	4.93	.2828			.42	2.52
48	.33	5.26	-.4692	.05	3.68	-.5924				.1821	-.1104	1.53	4.89	.2688			.42	2.50
60	.45	5.71	-.5064	.02	4.05	-.6559				.1934	-.0819	1.63	4.77	.2720			.43	2.34
72	.49	5.81	-.5176	.02	4.07	-.6540				.2212	-.1126	1.67	4.73	.2565			.46	2.34

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: (12853) - CAPE KENNEDY
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 22
ALPHA ANGLE - 90.0

X = U(AT T)
Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, X)	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	3.16	5.95	.2188	.07	3.27	900											
24																	
36																	
48																	
60																	
72																	

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, X)	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.11	4.09	-.3285	.02	3.47	.0910	-.5220	.0910	-.0442	1.69	5.62	.2562	.04	5.62	.2562	.04	2.79
24	.19	4.52	-.3577	.02	3.21	.0870	-.4850	.0870	-.0159	1.75	5.56	.2563	.09	5.56	.2563	.09	2.86
36	.28	5.15	-.4161	.03	3.84	.1380	-.5838	.1380	-.0561	1.77	5.41	.2629	.08	5.41	.2629	.08	2.65
48	.38	5.39	-.4374	.03	4.06	.2032	-.6192	.2032	-.1122	1.81	5.35	.2411	.06	5.35	.2411	.06	2.57
60	.48	5.89	-.4776	.00	4.28	.2252	-.6536	.2252	-.1380	1.85	5.23	.2326	.04	5.23	.2326	.04	2.47
72	.57	6.11	-.4905	.01	4.35	.2479	-.6656	.2479	-.1493	1.91	5.18	.2217	.05	5.18	.2217	.05	2.44

BI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION: 1988 - CAPE KENNEDY
 MONTH OF RECORD: NOVEMBER
 PERIOD OF RECORD: 1/55 - 12/70
 ALTITUDE: 23
 ALPHA ANGLE: 30.0

BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN X ²	S.D. X ²	P (X ² , YP)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (XP, YP)
3.72	5.43	2158	3.4	3.21	900														
MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	P (XP, YP)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	P (XP, YP)
1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12968) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP							
		MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y								
		4.81	6.93	.1953	.45	3.31	900	4.84	.47								
DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP			
12	24	.08	4.25	-.3009	-.00	3.46	-.5190	.0288	-.0099	2.45	6.66	.2359	.24	2.83			
36	48	.17	4.70	-.3252	.00	3.51	-.5263	.0718	-.0227	2.55	6.61	.2248	.19	2.91			
60	72	.30	5.32	-.3635	.03	4.18	-.6262	.0869	-.0231	2.63	6.51	.2347	.32	2.58			
		.41	5.75	-.3841	.04	4.23	-.6356	.1183	-.0821	2.74	6.44	.2252	.35	2.55			
		.52	6.26	-.4128	.05	4.56	-.6896	.1596	-.0982	2.82	6.36	.2150	.32	2.39			
		.53	6.64	-.4371	.06	4.61	-.7036	.1955	-.1204	2.88	6.28	.1960	.32	2.35			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 25
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,X)	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
		6.38	7.76	.2359	.37	3.77	900											
12		.09	4.32	-.2709	-.5169	.0876	-.0581	-.35	7.47	.2721	.11	3.23	-.0159	2.35	7.47	.2721	.11	3.23
24		.19	4.80	-.2937	-.5297	.0914	-.0701	3.47	7.42	.2624	.08	3.20	-.0318	3.47	7.42	.2624	.08	3.20
36		.29	5.49	-.3372	-.6062	.1595	-.1168	3.52	7.31	.2555	.13	3.00	-.0658	3.52	7.31	.2555	.13	3.00
48		.42	6.15	-.3695	-.6436	.1580	-.1179	3.64	7.21	.2627	.13	2.88	-.0671	3.64	7.21	.2627	.13	2.88
60		.53	6.57	-.3960	-.6865	.1924	-.1361	3.69	7.12	.2532	.18	2.74	-.0951	3.69	7.12	.2532	.18	2.74
72		.66	6.87	-.4147	-.6896	.2279	-.1561	3.77	7.06	.2274	.20	2.73	-.1256	3.77	7.06	.2274	.20	2.73

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 00
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	R (XP, Y)	R (YP, X)	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.11	4.44	-.2529	.02	3.69	-.4577	.31	3.94	900	4.27	7.98	-.2845	.06	3.50	-.0047	-.0284	-.0047	7.84	.33	7.98	.2845	.06	3.50
24	.17	5.20	-.2968	.05	3.94	-.4896				4.30	7.88	-.2533	.08	3.44	-.0354	-.0534	-.0354			7.88	.2533	.08	3.44
36	.29	5.88	-.3402	.06	4.56	-.5698				4.31	7.76	-.2530	.06	3.24	-.0526	-.0876	-.0526			7.76	.2530	.06	3.24
48	.41	6.50	-.3661	.05	4.77	-.6002				4.49	7.67	-.2360	.12	2.97	-.0902	-.1102	-.0902			7.67	.2360	.12	2.97
60	.51	7.09	-.3931	.09	5.25	-.6575				4.55	7.56	-.2454	.26	2.97	-.1063	-.0879	-.1063			7.56	.2454	.26	2.97
72	.61	7.55	-.4198	.12	5.36	-.6764				4.64	7.48	-.2385	.25	2.90	-.1170	-.1017	-.1170			7.48	.2385	.25	2.90

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 27
 ALPHA ANGLE - 90.0

X = U(1AT T)
 Y = V(1AT T)

XP = U(1AT T + DT) - U(1AT T)
 YP = V(1AT T + DT) - V(1AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	9.42	8.88	.1622	.52	4.04	900								
24														
36														
48														
60														
72														

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12858) - CAPE KENNEDY

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
11	1/56 - 12/70	0	90.0	.04	2.90	-.2098	-1.11	2.82	900
11	1/56 - 12/70	1	90.0	.18	6.87	.1475	-.66	5.34	900
11	1/56 - 12/70	2	90.0	2.84	7.32	.1798	-.18	5.34	900
11	1/56 - 12/70	3	90.0	5.47	7.69	.1970	-.17	5.66	900
11	1/56 - 12/70	4	90.0	7.82	8.00	.2164	-.25	6.31	900
11	1/56 - 12/70	5	90.0	10.40	8.73	.2569	-.27	7.00	900
11	1/56 - 12/70	6	90.0	13.12	9.62	.3025	-.23	7.95	900
11	1/56 - 12/70	7	90.0	15.89	10.26	.3124	-.27	9.12	900
11	1/56 - 12/70	8	90.0	18.90	11.18	.3210	-.44	10.47	900
11	1/56 - 12/70	9	90.0	21.89	12.13	.3635	-.27	11.81	900
11	1/56 - 12/70	10	90.0	24.84	13.28	.3938	-.31	13.35	900
11	1/56 - 12/70	11	90.0	27.83	13.80	.3865	-.45	14.85	900
11	1/56 - 12/70	12	90.0	29.90	14.03	.4052	-.68	15.47	900
11	1/56 - 12/70	13	90.0	30.24	13.15	.3793	-.46	14.16	900
11	1/56 - 12/70	14	90.0	28.33	11.84	.3742	-.65	11.90	900
11	1/56 - 12/70	15	90.0	24.47	9.90	.3551	-.42	9.68	900
11	1/56 - 12/70	16	90.0	20.01	8.48	.3104	-.42	8.07	900
11	1/56 - 12/70	17	90.0	15.06	7.43	.2043	-.43	6.74	900
11	1/56 - 12/70	18	90.0	10.01	6.51	.1792	-.41	5.13	900
11	1/56 - 12/70	19	90.0	6.44	5.67	.1853	-.17	4.09	900
11	1/56 - 12/70	20	90.0	4.19	5.32	.1609	-.12	3.42	900
11	1/56 - 12/70	21	90.0	3.37	5.53	.2279	-.02	3.10	900
11	1/56 - 12/70	22	90.0	3.16	5.95	.2188	.07	3.27	900
11	1/56 - 12/70	23	90.0	3.72	6.43	.2058	.34	3.21	900
11	1/56 - 12/70	24	90.0	4.81	6.98	.1953	.45	3.31	900
11	1/56 - 12/70	25	90.0	6.30	7.76	.2359	.57	3.77	900
11	1/56 - 12/70	26	90.0	7.91	8.25	.2332	.31	3.94	900
11	1/56 - 12/70	27	90.0	9.42	8.88	.1622	.52	4.04	900

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 0
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X GIVEN Y	MEAN Y GIVEN X	R (XP, YP)	MEAN XP GIVEN YP	S.D. XP GIVEN YP	S.D. YP GIVEN XP
12	-.05	2.59	-.4858	.07	2.88	924	-.07	2.88	-.3159	-.4825	3.570	-.0847	-.0847	-.2858	-.29	2.25	2.52
24	-.07	3.03	-.5736	.11	3.04		-.07	3.04	-.3511	-.6074	4.004	-.0245	-.0245	-.2456	-.29	2.13	2.28
36	-.05	3.52	-.6657	.14	4.05		-.05	4.05	-.3533	-.6817	3.417	.1340	.1340	-.2354	-.30	1.97	2.14
48	-.02	3.50	-.6600	.15	4.19		-.02	4.19	-.3323	-.7028	2.745	.1789	.1789	-.2528	-.32	2.01	2.10
60	-.01	3.04	-.6856	.15	4.24		-.01	4.24	-.3228	-.7088	2.348	.2167	.2167	-.2545	-.33	1.95	2.09
72	-.01	3.50	-.6565	.15	4.20		-.01	4.20	-.2797	-.6968	.1835	.1998	.1998	-.2095	-.33	2.02	2.13

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN
X

GIVEN
Y

.56

-1.06

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (120681) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (M) - 1
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,X)	R (YP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	1.58	8.73	-0.011	.27	5.88	924													
24																			
36																			
48																			
60																			
72																			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (XP,X)	R (YP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	1.58	8.73	-0.011	.27	5.88	924													
24																			
36																			
48																			
60																			
72																			

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION 1128581 - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 2
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	5.03	7.15	.0328	.52	5.56	924

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.03	5.32	-.3810	.06	4.93	-.4338	.1209	.3421	-.3776	2.61	6.16	.0046	2.10	4.49
24	.00	7.55	-.5340	.19	6.70	-.5265	.0650	.2624	-.3057	2.67	5.75	.0169	1.32	4.10
36	.11	8.77	-.6153	.27	7.84	-.5836	.0551	.1561	-.1964	2.76	5.51	.0295	.85	3.91
48	.20	9.26	-.6493	.29	7.89	-.7025	.0425	.0622	-.1042	2.82	5.41	.0357	.56	3.52
60	.27	9.40	-.6585	.31	7.95	-.7030	.0354	.0179	-.0535	2.86	5.38	.0436	.44	3.94
72	.34	9.41	-.6587	.35	7.93	-.6927	.0381	-.0094	-.0236	2.91	5.38	.0510	.39	4.01

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	GIVEN Y
	4.56	.71

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12998) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/55 - 12/70
 ALTITUDE (FT) - 3
 ALPHA ANGLE - 90.0
 X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	R (Y, YP)	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	8.37	7.51	.0932	.38	5.93	924																
12																						
24																						
36																						
48																						
60																						
72																						

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12688) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 4
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (XP, YP)
12	24	11.71	8.06	.1565	.70	6.67	924												
36	48																		
60	72																		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112888) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KHI) - 5
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X 14.54 S.D. X 8.83 R (X, Y) .1726 MEAN Y 1.16 S.D. Y 7.71 N 924

DT 12 24 36 48 60 72
 MEAN XP -.03 .00 .09 .18 .24 .34
 S.D. XP 8.15 8.33 9.60 10.20 10.68 10.84
 R (X, XP) -.3579 -.4794 -.5460 -.5756 -.6006 -.6092
 MEAN YP .03 .17 .33 .37 .46 .54
 S.D. YP 7.09 9.06 10.02 10.50 10.55 10.48
 R (Y, YP) -.4544 -.5796 -.6395 -.6675 -.6703 -.6635
 R (XP, YP) .0944 .1325 .1445 .1305 .1123 .1134
 R (XP, Y) .2272 .1249 .0502 -.0050 -.0383 -.0578
 R (YP, X) -.2445 -.2275 -.1950 -.1432 -.1019 -.0885
 MEAN XP 7.30 7.49 7.61 7.66 7.69 7.74
 S.D. XP 8.03 7.61 7.32 7.19 7.05 7.00
 R (XP, YP) .1980 .1956 .1968 .2049 .2134 .2099
 MEAN YP 5.16 3.07 2.13 1.40 .95 .79
 S.D. YP 6.54 6.09 5.82 5.71 5.72 5.77

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 6
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
12	17.52	9.42	.1966	1.21	8.47	924			

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (XP,YP)	MEAN Y	S.D. Y	R (XP,X)	R (YP,Y)	R (YP,X)	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	17.52	9.42	.1966	1.21	8.47	924	17.13	1.80										

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION NUMBER - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1955 - 12/70
 ALTITUDE (FT) - 7
 ALPHA ANGLE - 30.5

$X = U'AT$
 $Y = V'AT$
 $XP = U'AT + \sigma^2(T)$
 $YP = V'AT + \sigma^2(T)$

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

DT HR	MEAN X				MEAN Y				MEAN XP				MEAN YP			
	20.50	10.52	.2218	1.43	9.32	.924			20.22	2.13			5.81	3.32	2.52	1.41
12	S.D. X				S.D. Y				S.D. XP				S.D. YP			
	7.88	9.45	10.37	11.80	12.28	12.55			8.80	9.30	8.94	8.71	8.54	8.44	8.14	7.59
24	R (X, Y)				R (XP, YP)				R (Y, YP)				R (XP, YP)			
	-.3773	-.4563	-.5245	-.5855	-.6430	-.6943			-.1497	-.1898	-.2321	-.2552	-.1847	-.1920	-.1518	-.1422
36	P (X, Y)				P (XP, YP)				P (Y, YP)				P (XP, YP)			
	.1216	.0234	-.0472	-.0333	-.0333	-.0723			.1216	.0234	-.0472	-.0333	.1216	.0234	-.0472	-.0333
48	R (X, Y)				R (XP, YP)				R (Y, YP)				R (XP, YP)			
	-.1497	-.1898	-.2321	-.2552	-.1847	-.1920			-.1497	-.1898	-.2321	-.2552	-.1847	-.1920	-.1518	-.1422
60	P (X, Y)				P (XP, YP)				P (Y, YP)				P (XP, YP)			
	.1216	.0234	-.0472	-.0333	-.0333	-.0723			.1216	.0234	-.0472	-.0333	.1216	.0234	-.0472	-.0333
72	R (X, Y)				R (XP, YP)				R (Y, YP)				R (XP, YP)			
	-.1497	-.1898	-.2321	-.2552	-.1847	-.1920			-.1497	-.1898	-.2321	-.2552	-.1847	-.1920	-.1518	-.1422

QUADRIVARIATE AND COVOLUTIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 9
ALPHA ANGLE - 90.0

$$\begin{aligned} X &= U(AT) \\ Y &= V(AT) \\ XP &= U(AT) \\ YP &= V(AT) \end{aligned}$$

XP = U(AT) T ♦ DT) - U(AT) T)
YP = V(AT) T ♦ DT) - V(AT) T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	X				Y				X, Y			
	MEAN	S.D.	R	MEAN	S.D.	R	MEAN	S.D.	R	MEAN	S.D.	R
	XP	XP	(X, Y)	Y	Y	(X, Y)	XP	YP	(XP, YP)	XP	YP	(XP, YP)
12	-0.08	8.18	- .3205	.10	9.61	.2334	.0055	-1.596	13.36	12.58	.3201	4.73
24	-0.11	11.31	- .4412	.23	12.63	.2616	- .0775	-1.700	13.16	11.95	.3247	2.64
36	-0.10	13.14	- .5085	.36	14.38	.2819	- .1439	-1.692	13.10	11.40	.3234	9.09
48	-0.11	14.37	- .5514	.46	15.11	.2958	- .1757	-1.723	13.12	11.13	.3204	8.86
60	-0.11	15.13	- .5804	.52	15.38	.2821	- .1708	-1.765	13.13	10.86	.3252	8.74
72	-0.07	15.57	- .5984	.65	15.95	.2850	- .1480	-1.693	13.15	10.68	.3228	8.67

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 10
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-09	8.77	-0.3159	.12	10.33	-0.3950	2.30	13.01	924	28.84	3.09	14.89	13.86	.3223	3.00	11.91
24	-15	12.15	-0.4353	.27	13.79	-0.5272						14.79	13.17	.3274	1.58	11.05
36	-13	14.27	-0.5081	.40	15.75	-0.5967						14.79	12.60	.3229	1.02	10.44
48	-20	15.63	-0.5534	.45	16.53	-0.6194						14.82	12.18	.3275	1.01	10.21
60	-20	16.55	-0.5829	.52	17.03	-0.6392						14.97	11.89	.3431	1.35	10.00
72	-20	17.20	-0.6057	.63	17.15	-0.6438						14.99	11.64	.3465	1.39	9.95

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 11
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	32.49	15.08	.3057	2.35	14.06	924

DT HR	MEAN		S.D.		R		MEAN		S.D.		R		MEAN		S.D.	
	XP	YP	XP	YP	(X, XP)	(Y, YP)	(XP, YP)	(XP, Y)	(YP, X)	(YP, Y)	(XP, X)	(XP, YP)	(XP, Y)	XP	YP	YP
12	-.10	8.83	-.3156	10.68	.19	-.3816	.1695	-.0575	-.0643	15.03	14.31	.3232	1.28	13.00		
24	-.15	12.38	-.4338	14.54	.35	-.5166	.2304	-.1222	-.0971	15.28	13.59	.3294	.86	12.04		
36	-.17	14.40	-.4988	16.61	.45	-.5823	.2753	-.1773	-.1186	15.35	13.07	.3237	.48	11.43		
48	-.23	15.81	-.5429	17.44	.50	-.6040	.2812	-.1907	-.1321	15.45	12.56	.3206	.45	11.21		
60	-.23	16.90	-.5787	17.93	.59	-.6219	.2544	-.1724	-.1349	15.58	12.30	.3344	.73	11.01		
72	-.22	17.84	-.6092	18.23	.73	-.6341	.2389	-.1481	-.1549	15.75	11.96	.3417	1.29	10.88		

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 12
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X, XP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		35.01	15.16	.2937	2.69	14.62	924												3.46	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
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QUADRAVARIATE AND CONDITIONAL CIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12865) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 13
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	35.94	14.09	.3166	3.00	13.54	924

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

OT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.06	8.23	-.3030	.12	8.72	-.3190	.1748	-.0179	-.0937	17.63	13.41	.3304	3.47	12.83
24	-.07	11.44	-.4226	.24	12.37	-.4497	.2557	-.1052	-.1208	17.47	12.77	.3291	1.72	12.10
36	-.06	13.66	-.5018	.38	14.56	-.5284	.2863	-.1628	-.1360	17.41	12.19	.3253	.93	11.50
48	-.05	15.05	-.5514	.42	15.80	-.5722	.3085	-.1958	-.1550	17.41	11.75	.3167	.71	11.10
60	-.04	16.07	-.5855	.51	16.73	-.6053	.2996	-.1936	-.1667	17.57	11.42	.3231	1.03	10.78
72	-.01	16.76	-.6099	.65	17.13	-.6251	.2801	-.1722	-.1749	17.70	11.17	.3379	1.57	10.57

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
	35.61	3.72

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 14
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = V(IAT T)

XP = UIAT T + DT) - UIAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP,YP)	MEAN XP	S.D. YP
12	-06	7.45	-0.3108	.08	7.27	-0.3186	2.70	11.17	924	34.20	3.40	12.12	.3586	4.64	10.56
24	-03	10.55	-0.4346	.19	10.03	-0.4355						11.56	.3536	2.95	10.04
36	-09	12.60	-0.5158	.31	11.68	-0.5079						11.01	.3413	1.85	9.62
48	-07	13.93	-0.5700	.39	12.70	-0.5496						10.56	.3425	1.37	9.33
60	-12	14.86	-0.6059	.46	13.36	-0.5802						10.23	.3417	1.30	9.10
72	-10	15.58	-0.6342	.62	13.91	-0.6088						9.94	.3620	1.61	8.86

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12/58) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
 YP = VIAT T + DT) - VIAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	31.00	11.28	.3111	2.32	9.41	924

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	12	12	12	12	12	12	12	12	12	12	12	12	12	12
12	-.03	5.90	-.3145	.02	6.10	-.3071	.1541	.0471	-.1347	15.38	10.66	.3331	4.87	8.91
24	-.07	9.29	-.4329	.12	8.33	-.4225	.2295	-.0345	-.1603	15.11	10.14	.3314	2.92	8.51
36	-.07	10.93	-.5073	.23	9.73	-.4921	.2907	-.1057	-.1811	15.11	9.71	.3212	2.02	8.18
48	-.03	12.21	-.5624	.32	10.63	-.5353	.3060	-.1486	-.1753	15.07	9.32	.3198	1.41	7.95
60	-.01	13.29	-.5078	.42	11.17	-.5668	.3036	-.1616	-.1859	15.16	8.95	.3242	1.30	7.75
72	.04	14.00	-.5373	.55	11.62	-.5949	.2763	-.1416	-.1884	15.31	8.69	.3448	1.50	7.56

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 15
 ALPHA ANGLE - 90.0

X = UIAT T)
 Y = VIAT T)
 XP = UIAT T + DT)
 YP = VIAT T + DT)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
	26.50	9.92	.2693	2.01	8.39	924

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP	S.D. YP	R (XP, YP)	MEAN YP	S.D. YP
12	.02	6.19	-.3291	.03	5.66	-.3194	.0752	13.09	8.54	.3005	4.68	7.83
24	.01	8.02	-.4255	.12	7.50	-.4232	.1831	13.44	8.59	.2921	2.82	7.57
36	.04	9.94	-.5094	.21	8.59	-.4840	.2162	13.45	8.20	.2909	2.12	7.32
48	.06	10.62	-.5621	.28	9.42	-.5338	.2262	13.43	7.66	.2930	1.77	7.08
60	.07	11.53	-.6031	.33	9.82	-.5594	.2316	13.43	7.59	.2971	1.45	6.95
72	.09	12.14	-.6362	.44	10.19	-.5831	.2322	13.53	7.34	.3078	1.34	6.81

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OF FOUR PAGES

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 17
ALPHA ANGLE - 90.0

X = UIAT T)
Y = VIAT T)

XP = UIAT T + DT) - UIAT T)
YP = VIAT T + DT) - VIAT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, Y)	R (XP, X)		MEAN YP	S.D. YP	R (XP, YP)	GIVEN X	GIVEN Y		
	21.64	8.35	.2719	1.53	7.49	924										21.38	2.12		
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP			MEAN XP	S.D. XP	R (XP, Y)	R (YP, X)		MEAN YP	S.D. YP	R (XP, YP)	S.D. XP	R	S.D. YP	
12	.01	5.67	-.3451	-.00	4.97			10.94	7.78	.0688	-.1671		3.96	7.05	.2938	7.78	.2938	7.05	
24	.04	7.35	-.4452	.08	6.53			11.18	7.42	.0108	-.2070		2.94	6.78	.2874	7.42	.2874	6.78	
36	.04	8.70	-.5211	.16	7.60			11.16	7.05	-.0294	-.2257		2.37	6.34	.2948	7.05	.2948	6.34	
48	.05	9.61	-.5834	.20	8.37			11.02	6.75	-.0537	-.2109		1.87	6.14	.2945	6.75	.2945	6.14	
60	.01	10.36	-.6251	.24	8.98			11.01	6.50	-.0686	-.2018		1.84	6.14	.3063	6.50	.3063	6.14	
72	-.01	10.73	-.6449	.32	9.39			10.99	6.37	-.0818	-.1775		1.37	5.98	.3194	6.37	.3194	5.98	

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12982) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/58 - 12/70
 ALTITUDE (FT) - 18
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. XP	N	GIVEN X	GIVEN Y
16.24	7.33	.2434	1.01	6.13	924	16.16	1.57

DT HR	MEAN XP	S.D. YP	R (X, XP)	MEAN YP	S.D. XP	P (Y, YP)	R (XP, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.01	5.62	-.3337	-.01	4.22	-.3447	.0286	7.83	6.69	.2789	2.38	5.70
24	-.02	6.68	-.4596	.04	5.28	-.4231	.1377	8.12	6.45	.2688	1.92	5.51
36	-.01	7.39	-.5087	.10	6.19	-.4878	.1682	8.18	6.27	.2712	1.69	5.31
48	-.05	8.10	-.5568	.14	6.77	-.5332	.1835	8.17	6.06	.2702	1.57	5.16
60	-.07	8.57	-.5857	.17	7.26	-.5752	.1987	8.18	5.92	.2694	1.09	5.07
72	-.08	9.00	-.6144	.23	7.94	-.6035	.2030	8.18	5.77	.2719	.97	4.87

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12083) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (MM) - 19
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)

XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y					
	11.16	6.84	.2763	.58	4.85	824							11.21	1.02					
DT	MEAN XP	S.D. XP	R (X, XP)					MEAN YP	S.D. YP	R (Y, YP)			S.D. XP	R (XP, YP)	MEAN YP	S.D. YP			
12	.31	5.38	-.3991					.03	4.03	-.4232			6.23	.3134	1.01	4.38			
24	-.02	5.86	-.4302					.04	4.43	-.4557			5.91	.3183	1.14	4.29			
36	-.02	6.71	-.4883					.08	5.12	-.5220			5.66	.3144	1.16	4.09			
48	-.03	7.10	-.5157					.11	5.30	-.5381			5.65	.3168	.92	4.06			
60	-.06	7.60	-.5502					.16	5.83	-.5823			5.65	.3328	.86	3.88			
72	-.06	7.89	-.5705					.22	5.87	-.6022			5.65	.3385	.80	3.85			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12883) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 20
 ALPHA ANGLE - 90.0

X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT) - U(IAT T)
 YP = V(IAT T + DT) - V(IAT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN XP	S.D. XP	R (X, XP)	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	S.D. XP	MEAN YP	S.D. YP	R (XP, X)	MEAN YP	S.D. YP	
12	.01	5.20	-.3978	6.57	.2056	.32	3.95	924		4.13	6.01	.2493	6.01	.46	3.38	-.0788	.46	3.38	
24	-.01	5.86	-.4452							4.12	5.86	.2694	5.86	.50	3.38	-.0856	.50	3.38	
35	-.04	6.46	-.4838							4.16	5.71	.2776	5.71	.46	3.20	-.0923	.46	3.20	
48	-.06	6.97	-.5252							4.15	5.56	.2787	5.56	.47	3.21	-.1093	.47	3.21	
60	-.10	7.17	-.5432							4.15	5.50	.2918	5.50	.47	3.09	-.1073	.47	3.09	
72	-.11	7.46	-.5676							4.14	5.39	.2957	5.39	.40	3.08	-.1103	.40	3.08	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 21
 ALPHA ANGLE - 90.0

$X = U(1, T)$
 $Y = V(1, T)$
 $XP = U(1, T + DT) - U(1, T)$
 $YP = V(1, T + DT) - V(1, T)$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	R (YP, X)	MEAN Y	S.D. Y	R (X, Y)	DT HR
12	.00	5.14	-.3974	-.04	3.92	-.5365	.30	3.71	924	.30	3.71	-.0509	3.75	5.98	-.0809	.07	3.13	.2894	12
24	-.01	5.66	-.4312	-.06	3.85	-.5196						-.0211	3.83	5.87	-.1469	.32	3.15		24
36	-.03	6.16	-.4677	-.05	4.28	-.5768						-.0613	3.82	5.75	-.1559	.24	3.02		36
48	-.13	6.59	-.4982	-.09	4.48	-.6003						-.0719	3.79	5.64	-.1559	.19	2.96		48
60	-.22	7.05	-.5310	-.09	4.64	-.6199						-.0559	3.76	5.51	-.1784	.25	2.89		60
72	-.24	7.53	-.5683	-.10	4.73	-.6340						-.0867	3.74	5.35	-.1810	.16	2.86		72

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
7.19	.68	.3306	3.75	5.98	.3306	.07	3.13
		.3228	3.83	5.87	.3228	.32	3.15
		.3205	3.82	5.75	.3205	.24	3.02
		.3282	3.79	5.64	.3282	.19	2.96
		.3368	3.76	5.51	.3368	.25	2.89
		.3338	3.74	5.35	.3338	.16	2.86

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112863) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 22
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.04	4.69	-.3624	-.03	3.39	.2682	.10	3.33	924	7.00	.36	3.77	5.96	.3225	.07	2.86
24	-.07	5.06	-.3982	-.05	3.38							3.79	5.68	.3099	.10	2.85
36	-.13	5.60	-.4297	-.05	3.82							3.84	5.79	.3111	.04	2.74
48	-.18	6.08	-.4681	-.08	3.99							3.81	5.66	.3179	.12	2.69
60	-.24	6.53	-.4997	-.08	4.18							3.79	5.55	.3252	.06	2.61
72	-.32	7.00	-.5352	-.10	4.28							3.76	5.41	.2976	.06	2.58

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 23
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
	8.23	7.02	.1909	.18	3.50	924	7.85	.42
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP
12	.03	4.83	-.3358	-.01	3.84	-.0487	4.41	6.61
24	.01	4.27	-.3663	-.04	3.67	-.0731	4.42	6.53
36	-.06	6.03	-.4184	-.08	4.23	-.0654	4.38	6.38
48	-.13	6.59	-.4520	-.10	4.21	-.0721	4.38	6.26
60	-.26	8.91	-.4702	-.11	4.67	-.0875	4.35	6.20
72	-.36	7.52	-.5102	-.12	4.78	-.1018	4.33	6.04

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (112858) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KM) - 24
 ALPHA ANGLE - 90.0

X = U(AT T)
 Y = V(AT T)

XP = U(AT T + DT) - U(AT T)
 YP = V(AT T + DT) - V(AT T)

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	9.97	7.88	.1924	.48	3.58	924	9.64	.67
DT HR	QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (YP,X)	MEAN XP	S.D. XP
12	.04	5.48	-.3395	.00	3.75	-.0838	5.30	7.41
24	.01	5.59	-.3625	-.01	3.78	-.0920	5.41	7.34
36	-.06	6.59	-.3982	-.04	4.17	-.0746	5.37	7.23
48	-.17	7.34	-.4383	-.07	4.38	-.0953	5.36	7.08
60	-.30	7.92	-.4705	-.10	4.71	-.1048	5.31	6.95
72	-.41	8.31	-.4884	-.13	4.76	-.1273	5.32	6.88

STATION (12868) - CAPE KENNEDY
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 25
ALPHA ANGLE - 90.0

$$\begin{matrix} X & Y \\ - & - \\ U(AT) & V(AT) \\ T) & T) \end{matrix}$$
$$\begin{aligned} X^P &= U(AT + DT) - U(AT) \\ Y^P &= V(AT + DT) - V(AT) \end{aligned}$$
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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12868) - CAPE KENNEDY
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/56 - 12/70
 ALTITUDE (KH) - 26
 ALPHA ANGLE - 90.0

$X = U(AT\ T)$
 $Y = V(AT\ T)$
 $XP = U(AT\ T + DT) - U(AT\ T)$
 $YP = V(AT\ T + DT) - V(AT\ T)$

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-0.00	5.76	-.3001	-.02	4.34	.1154	.85	4.21	924	-.0116	6.95	9.10	-.1393	.52	3.60
24	-.01	6.54	-.3335	-.01	4.13					-.0141	7.08	8.99	-.1361	.47	3.66
36	-.06	7.48	-.3744	-.01	4.96					-.0382	7.17	8.84	-.1380	.59	3.39
48	-.17	7.94	-.3897	-.02	5.03					-.0463	7.24	8.78	-.1330	.60	3.36
60	-.30	8.76	-.4266	-.06	5.44					-.0749	7.24	8.62	-.1297	.70	3.18
72	-.43	9.27	-.4484	-.10	5.45					-.0823	7.22	8.52	-.1330	.73	3.18

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (12858) - CAPE KENNEDY
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/56 - 12/70
ALTITUDE (KM) - 27
ALPHA ANGLE - 90.0

X = U(IAT T)
Y = V(IAT T)
XP = U(IAT T + DT) - U(IAT T)
YP = V(IAT T + DT) - V(IAT T)

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.03	5.58	-.2581	-.01	3.98	.1122	1.27	4.45	924	14.17	1.30	7.93	9.68	.1212	.86	3.97
24	.02	6.70	-.3074	.03	4.32							7.98	9.73	.1241	.89	3.95
36	-.03	7.58	-.3417	.02	5.02							8.06	9.60	.1206	.77	3.74
48	-.12	8.36	-.3691	-.02	5.34							8.17	9.50	.1138	.76	3.64
60	-.24	9.23	-.4073	-.04	5.69							8.12	9.34	.1082	.75	3.50
72	-.37	9.78	-.4283	-.10	5.65							3.11	9.24	.1150	.73	3.44

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (12868) - CAPE KENNEDY

X = U(1AT T)
Y = V(1AT T)

MONID	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
12	1/56 - 12/70	0	90.0	.60	2.67	-.2884	-.93	2.96	924
12	1/56 - 12/70	1	90.0	1.58	6.73	-.0011	.27	5.88	924
12	1/56 - 12/70	2	90.0	5.03	7.15	.0328	.52	5.56	924
12	1/56 - 12/70	3	90.0	8.37	7.51	.0932	.38	5.93	924
12	1/56 - 12/70	4	90.0	11.71	8.06	.1565	.70	6.67	924
12	1/56 - 12/70	5	90.0	14.54	8.83	.1726	1.16	7.71	924
12	1/56 - 12/70	6	90.0	17.32	9.42	.1956	1.21	8.47	924
12	1/56 - 12/70	7	90.0	20.50	10.52	.2218	1.49	9.32	924
12	1/56 - 12/70	8	90.0	23.56	11.75	.2809	1.65	10.26	924
12	1/56 - 12/70	9	90.0	26.78	13.34	.3083	2.12	11.53	924
12	1/56 - 12/70	10	90.0	29.88	14.63	.3070	2.30	13.01	924
12	1/56 - 12/70	11	90.0	32.49	15.08	.3057	2.35	14.06	924
12	1/56 - 12/70	12	90.0	35.01	15.16	.2937	2.69	14.62	924
12	1/56 - 12/70	13	90.0	35.94	14.09	.3166	3.00	13.54	924
12	1/56 - 12/70	14	90.0	34.50	12.85	.3365	2.70	11.17	924
12	1/56 - 12/70	15	90.0	31.00	11.28	.3111	2.32	9.41	924
12	1/56 - 12/70	16	90.0	26.50	9.52	.2693	2.01	8.39	924
12	1/56 - 12/70	17	90.0	21.64	8.35	.2719	1.53	7.49	924
12	1/56 - 12/70	18	90.0	16.24	7.33	.2434	1.01	6.13	924
12	1/56 - 12/70	19	90.0	11.16	6.84	.2753	.58	4.85	924
12	1/56 - 12/70	20	90.0	8.36	6.57	.2056	.32	3.95	924
12	1/56 - 12/70	21	90.0	7.37	6.52	.2894	.30	3.71	924
12	1/56 - 12/70	22	90.0	7.33	6.41	.2682	.10	3.33	924
12	1/56 - 12/70	23	90.0	8.23	7.02	.1909	.18	3.50	924
12	1/56 - 12/70	24	90.0	9.97	7.88	.1924	.48	3.58	924
12	1/56 - 12/70	25	90.0	11.89	8.68	.1841	.65	3.92	924
12	1/56 - 12/70	26	90.0	13.42	9.54	.1154	.85	4.21	924
12	1/56 - 12/70	27	90.0	14.62	10.22	.1122	1.27	4.45	924